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HARD RED SPRING WHEAT



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QUALITY REPORT

Physical, Chemical, Milling, and Baking Characteristics

1965 CROP

UNITED STATES DEPARTMENT OF AGRICULTURE
AGRICULTURAL RESEARCH SERVICE
CROPS RESEARCH DIVISION

UNITED STATES DEPARTMENT OF AGRICULTURE
Agricultural Research Service
Crops Research Division

Preliminary Report Not For Publication 1/

REPORT OF PHYSICAL, CHEMICAL, MILLING, AND BAKING EXPERIMENTS

WITH HARD RED SPRING WHEAT

1965 CROP 2/

by

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1/ This is a progress report of cooperative investigations containing data, the interpretation of which may be modified with additional experimentation. Therefore, publication, display, or distribution of any data or any statements herein should not be made without prior written approval of the Crops Research Division, Agricultural Research Service, United States Department of Agriculture and the cooperating agency or agencies concerned.

2/ Investigations of the Crops Research Division, Agricultural Research Service, in cooperation with the North Dakota Agricultural Experiment Station. The samples were obtained from the cooperative experiments with the State Agricultural Experiment Stations in the spring wheat region.

COOPERATING AGENCIES, STATIONS, AND PERSONNEL

The cooperating agencies and stations conducting the varietal plot and nursery experiments from which the 1965 spring wheat samples were received were as follows:

Colorado Agricultural Experiment Station:

Fort Collins.

Minnesota Agricultural Experiment Station:

Crookston, Morris, and St. Paul.

Montana Agricultural Experiment Station:

Bozeman, Cutbank, Dutton, Havre, and Sidney.

North Dakota Agricultural Experiment Station:

Casselton, Dickinson, Fargo, Minot, and Williston.

South Dakota Agricultural Experiment Station:

Highmore, and Watertown.

Wisconsin Agricultural Experiment Station:

Madison.

Wyoming Agricultural Experiment Station:

Laramie, and Sheridan.

A complete list of all cooperating agencies, stations, and personnel for the year will be found in the report by Dr. K. L. Lebsock, "Results on Spring Wheat Varieties grown in Cooperative Plot and Nursery Experiments in the Spring Wheat Region in 1965."

INTRODUCTION

Samples of standard varieties and many of the new strains of hard red spring wheat grown in cooperative experiments in the spring wheat region of the United States 3/ have been milled each year by the USDA. The flours were assayed chemically and physically and baked into bread to determine the quality characteristics. The purpose of this report is to make available to the cooperators, quality data on the standard varieties and new strains of hard red spring wheat from the 1965 crop.

The same general format and techniques were used in evaluating the wheats as were given in the quality reports of the past 3 years. The data contained in this report are comparable to data in past reports, and where applicable average results and also the average results of the 1964 crop are compared.

The new format adopted for the 1962 crop report uses the three categories: kernel characteristics, milling performance, and baking evaluation; only the deficiencies which may be apparent for the varieties, or outstanding characteristics, are given for sake of brevity. An additional column of General Evaluation has been added to the Uniform Regional Nursery Averages table giving the over-all performance of the variety for the sample submitted. It is hoped that with the use of this format one can quickly ascertain the various characteristics of the sample and any outstanding features or deficiencies which are apparent. Again, for physical characteristics, the mixogram data are given with no specific comments made regarding the patterns, since reference mixograms for each of the general types are presented at the end of the report.

Although the crop was harvested under adverse conditions, such as high moisture, especially in the northern section of the area, the milling results on an average for the Uniform Regional Nursery samples were better than last year. This was characteristic of the entire crop, therefore, extractions were generally higher than last year (approximately 1%) with much lower mineral content in the flour. However, the Field Plot samples were approximately the same to slightly poorer than last year.

The oxidation requirements for the 1965 crop were generally the same as the 1964 crop, requiring 5 p.p.m. bromate.

In previous reports, Advanced, Preliminary, and Yield Nursery samples as well as Special samples were included in the report. Since this

3/ Lebsock, K. L., "Results on Spring Wheat Varieties Grown in Cooperative Plot and Nursery Experiments in the Spring Wheat Region in 1965." USDA, Agricultural Research Service, Crops Research Division.

information is of primary interest only to those persons submitting the samples, they have been omitted from the report this year. Only those samples (Field Plot, Uniform Regional Nursery and Sawfly Yield Nursery) which are of regional interest are included.

SOURCE OF THE SAMPLES

Tests were performed on 596 samples received from field plots, uniform regional nursery, and sawfly nursery of the 1965 crop. These samples originated in seven states: Colorado, Minnesota, Montana, North Dakota, South Dakota, Wisconsin, and Wyoming. Nineteen stations from these states were represented, namely, Fort Collins in Colorado; Crookston, Morris, and St. Paul in Minnesota; Cutbank, Bozeman, Dutton, Havre, and Sidney in Montana; Casselton, Dickinson, Fargo, Minot, and Williston in North Dakota; Highmore and Watertown in South Dakota; Madison in Wisconsin; and Laramie and Sheridan in Wyoming.

A limited number of samples were blended this year. Only those samples from adjacent areas which had characteristics which were compatible were blended. The uniform regional nursery samples blended were the Morris and St. Paul samples, and the Williston and Sidney samples. Care was taken in choosing the samples for blending such that no extreme differences were apparent in the characteristics of the wheats, and protein contents were comparable. The samples blended were carefully selected to eliminate the effect blending could have when extreme differences exist between samples which would give erroneous results. After blending, the total number of samples milled and baked was 536.

On page 6 are listed the spring wheats which were included in the uniform regional nursery 1965 trials. The variety or cross, the station which developed the variety, the state selection number and the C.I. number are given.

The Laramie, Wyoming Uniform Regional Nursery samples (Table 19) were badly frost damaged. These samples were not rated and were only included in the report to show the effect frost damage can have on the milling and baking performance.

In Table 21 are given the average data for the Uniform Regional Nursery samples. The data for kernel characteristics, milling performance, and mixograms are arithmetical averages of the individual samples. However, the baking performances were obtained from blends of equal proportions of the individual flours from the 14 series of stations, excluding the Laramie, Wyoming samples.

Variety or Cross	Included by	Station Developing	State or Sel. No.	C.I. No.
Marquis				3641
Thatcher				10003
Selkirk				13100
Lee				12488
Pembina	Canada	Winnipeg	CT 229	13332
Crim	Minn.	St. Paul	II-53-404	13465
Justin	N. Dak.	Fargo	ND 102	13462
Chris	Minn.	St. Paul	II-53-525-1	13751
RL 4125 x Tc ⁶ - Sr ⁶	Canada	Winnipeg	RL 4159	13775
II-50-17 x Pilot	Montana	Bozeman	B61-95	13586
II-50-17 x Pilot	"	"	B60-82	13823
Kenya 338 x Lee	"	"	B61-89	13946
II-50-17 x Rushmore	Minn.	St. Paul	II-54-30	13655
M2854 ² x II-50-72	"	"	II-55-11	13773
ND81-III-58-2 x II-53-546	"	"	II-58-57	13825
Crim x II-53-521	"	"	II-59-9	13826
51-3549 x II-50-17	N. Dak.	Fargo	60-54	13596
(II-50-17 x 51-2688) ND4-Rsc	"	"	61-107	13937
Unknown	S. Dak.	Brookings	SD-624	13947
Unknown	"	"	SD-625	13948
Unknown	"	"	SD-626	13949
ND138 x (Lee x FPI 186035)	N. Dak.	Fargo	ND 264	13569
Cly x (Lee x FPI 186035)	"	"	ND 405	13779
Justin x ND 81	"	"	ND 363	13828
ND 42 x Justin	"	"	ND 321	13952
MEET x Cly ² - ND 81	"	"	ND 407	13953
Jtn x Cly ² - (N ² - MYGU)	"	"	ND 442	13954
N2350 ² x (Rmr - KF x Ns3880)	"	"	ND 455	13955
Jtn x ND 152	"	"	ND 456	13956
Jtn x ND 228	"	"	ND 457	13957

METHODS

Briefly, the following methods and terminologies were applied:

Test Weight Per Bushel - The weight per Winchester bushel of cleaned, dry, scoured wheat. To determine the dockage-free test weight on a comparable sample, approximately one pound per bushel should be subtracted from the value given.

1000 Kernel Weight - The 1000 kernel weight was determined by counting the number of kernels in a 10 gram sample of cleaned, picked wheat with an ASCO seed counter 4/.

Kernel Size - The percentages of the size of the kernels (large, medium, and small) were determined on a wheat sizer as described by Shuey 5/.

The sieves of the sizer were clothed as follows:

Top Sieve	- Tyler #7 with 2.92 mm. opening.
Middle Sieve	- Tyler #9 with 2.24 mm. opening.
Bottom Sieve	- Tyler #12 with 1.65 mm. opening.

Potential Yield - The potential yield was determined by multiplying the percentages of the overs of each sieve #7, #9, and #12, by the value of 78%, 73%, and 68%, respectively. The accumulation percentage is given as the potential yield.

Milling - The samples were cleaned by passing the wheat over an Emerson Kicker and Dockage Tester and through a modified Forster Scourer Model 6 4/. The clean dry samples were pre-tempered to 12% moisture for at least 72 hours; then tempered to 16% moisture and allowed to stand overnight prior to milling.

All samples except the field plot samples were milled on a Brabender Quadrumat Junior Mill 4/. The mill was equipped with a #18 wire on the drum sieve. The throughs of the #18 wire were rebolted on a Strand sifter equipped with a #60 Tyler sieve. The sample was sifted for 1 minute. The throughs of the #60 wire were classified as flour and this was the material tested.

The field plot samples were milled on a Buhler Continuous Experimental Mill. This mill has been slightly modified to give results more comparable to commercial milling. The break scalping sieves were clothed with #54 stainless steel wire, the reduction scalping sieves with #58, #66, and #105 stainless steel wires for the first, second and third reduction, respectively. All of the flour sieves were clothed with #135 stainless steel wire.

4/ Mention of a trade product, equipment or a commercial company in this publication does not imply its endorsement by the United States Department of Agriculture over similar products or companies not named.

5/ Shuey, William C. A wheat sizing technique for predicting flour milling yield. Cereal Science Today 5:71-72,75. 1960.

All 6 flour streams were combined to give the patent flour. The extraction of a good milling wheat using this flow is approximately 68%. This is comparable to a commercial "long patent" extraction flour. At this flour extraction of the wheat, the changes in flour ash are most sensitive to changes in percent extraction.

Protein Content - The protein was calculated by multiplying the factor of 5.7 times the percent nitrogen as determined by the standard Kjeldahl procedure.

Mineral Content or Ash Content - This was determined by measuring the residue of the minerals left after incinerating the sample for approximately 16 hours at 565° C. The results were reported as percentage of the sample which was incinerated.

Mixogram - The mixogram was determined by using 30 g. of flour and adding 20 cc. of water. The sensitivity spring setting was set at 10. All mixograms were run with constant weight of flour and volume of water. Absorptions reported were adjusted according to the height of the mixogram. The correction factor was determined from a series of flours by varying the amount of absorption.

Mixogram Pattern - The reference mixogram patterns given at the end of the report demonstrate the different types of mixograms which were obtained. A single number is assigned each pattern to characterize and simplify the classification of the curves, the larger number indicating stronger curve characteristics.

Baking Procedure or Formula - The baking formula used was as follows:

100% flour	3% milk D.S.M.
2% salt	3% yeast
5% sugar	2% shortening (Crisco, melted)

The sample was mixed to development in a National Manufacturing mixer 4/, for the 25 g. sample the Micro mixer, for the 100 g. sample the 100 g. special mixer size.

Absorption - This was the water, expressed as percent of the flour, required to bring the dough to proper consistency.

Crumb Color - This value was determined by comparing the loaf of the tested sample against a baking standard. This standard was selected as an average for the crop year for the spring wheat area.

Loaf Volume - This was volume of the baked loaf as determined by seed displacement.

All values (Protein, Ash, and Absorption) were reported on a 14% moisture basis.

DISCUSSION

The following discussion presents some of the basis for the techniques and criteria used in evaluating the samples. There are four major evaluation categories used: Kernel characteristics, to characterize the kernel; milling performance, to evaluate the general milling characteristics; mixogram patterns, to classify the flour as to type; and baking evaluation, to rate the flour as to over-all baking.

Each evaluation category can be important. A sample could be of a sufficiently poor quality for a given category to eliminate it from possible future testing. However, a sample submitted for the first time and found to be questionable should be tested again to establish if it has a desirable or undesirable classification. A sample which is consistently rated as questionable should be discarded.

All samples, as in previous years, are compared to a milling and baking standard which represents a blend of the crop year blended to a known quality. However, unlike previous years, the samples for the individual stations were evaluated against the average results of the varieties Chris, Crim, Justin, and Selkirk from the respective stations. Therefore, the evaluation ratings of one station are not directly comparable to those of another station. When comparing results of two or more stations, the individual items of data must be compared since in an over-all spring wheat producing area evaluation certain locations could have all samples, even the named varieties, classified as questionable to unsatisfactory due to the agronomic and climatic conditions of the individual locations.

An area may produce low protein wheats which give large and plump kernels, good milling, and kernel characteristics, but low protein, and unsatisfactory baking properties such as short mixing time, low loaf volume, and weak dough characteristics. The wheat from this area could not be considered as a strong spring wheat, and would not maintain the quality of the spring wheat producing area. A good variety should have tolerance to a wide range of environmental conditions and the over-all picture taken into consideration for establishing these varieties.

A sample rated as satisfactory to questionable has only a very minor fault; however, if it is questionable to satisfactory, the fault is more serious, but in either case the fault is not sufficient to be considered as detrimental. For questionable to unsatisfactory, and unsatisfactory to questionable, the faults are much more serious and the sample would have little future promise of being accepted if such faults are consistent.

When more than one of the factors are below the standard, the variety is marked as questionable or unsatisfactory. If sufficient data accumulated over a two- or three-year period show a definite deficiency, the variety should be discarded. If a major fault is found, the variety is undesirable and should be discarded.

Kernel Characteristics are important in determining the initial value of the wheat and, if extremely poor, could disqualify a new variety from further consideration. Because of the present grading system, it is desirable to have a good test weight. If a sample has a low 1000 kernel weight and small kernel size distribution, it would be considered a poor sample for milling because of the high ratio of bran to endosperm. Therefore, it is desirable to have plump kernels. Wheat ash is an important factor when comparing a variety against other standard varieties. If a sample would have consistently higher wheat mineral content, it would enhance the probability of having high flour ash. Low protein would not be desirable when comparing with standard varieties, because in a low protein crop year the probability of it having such a low protein as to be undesirable is very probable. Therefore, the protein must also be considered as a characteristic when comparing other varieties grown in the same locality.

Milling Performance is very important, especially the sub-category of milling characteristics. If low extractions or high flour ash are obtained, this becomes a major factor and is quite unacceptable from a commercial milling standpoint. All flour mineral contents are reported at a constant extraction of 65% so that the figures are directly comparable. As a rule of thumb, one can approximate that each point of ash (0.01%) is equivalent to approximately 2% in extraction.

Milling characteristics are important. A sample which tends to be soft in character requires a different milling technique to be milled properly. On commercial mills flowed for hard vitreous spring wheats, soft milling characteristics cause great difficulty. Therefore, if a sample shows softness in character, it is considered to be undesirable. Likewise, a sample which is extremely hard and vitreous will cause difficulty. Both types of wheat (soft or vitreous) require different roll pressures, clothing, sifter surface, and temper to be milled properly. If these wheats are blended with normal milling wheats, improper results are obtained, since these characteristics are not necessarily compatible or additive. Normal to soft score indicates that the sample shows a tendency toward softness of character on the flour mill stocks and extraction. This would indicate that the sample may give some difficulty for certain mill streams and an adjustment would either have to be made in the milling flow, or in tempering procedures to compensate for these differences. The properties of this wheat may or may not be compatible with other wheats with which it may be blended, therefore, it is important to maintain varieties with as uniform milling characteristics as possible.

The amount of protein recovered in the flour for a sample is of importance. The high protein wheats yielding low protein flours are not desirable. Such a wheat would have much of the protein distributed in the outer portion of the kernel which would result in excessive protein in the feed. Therefore, higher protein in the wheat would be necessary to yield a flour of comparable protein to a wheat which gives good flour protein recovery.

Mixogram Patterns and Farinogram Patterns are important in estimating the strength and mixing tolerance or potential mixing tolerance of a flour. A long flat curve is more desirable than a short peaked curve; however, an extremely long curve may be undesirable, since the flour would require excessive mixing to develop. The pattern of the curve is of importance as well as the length, and both must be considered.

Baking Evaluation takes into account the flour absorption, mixing time, dough characteristics, loaf volume and machinability. A sample which has low absorption would be unsatisfactory, compared to other spring wheats with normal absorption. A sample with extremely short mixing time would also be considered undesirable as a good strong spring wheat. When a sample is in the minimal range for these values, it is considered as questionable until further testing demonstrates whether a definite deficiency exists.

Doughs having mellow to weak dough properties show a tendency towards weakness. Also, for mellow to strong, the dough is mellow, but has a tendency to be strong, and a strong to mellow dough is just the reverse. Since these characteristics are subjective rather than objective, it is necessary at times to estimate the tendency; therefore, the necessity exists for apparent double grades.

The grain or appearance of the interior of the loaf shows how well the sample stood up during baking and may point out or explain some deficiencies which have been observed during the baking test.

Loaf volume indicates potential strength of the flour in a different manner than mixing time or dough characteristics, in that it shows the ability or lack thereof of the dough to expand under pressure and to contain the entrapped gases during this expansion. Weak flours act much like rotten balloons which burst when blown up and collapse, thus yielding low loaf volume or extremely large volume and large holes in the interior of the loaf. Low protein flours and lifeless (dead) doughs exhibit the properties similar to putty and do not expand during fermentation or baking and give low loaf volume. Tough and very bucky doughs are bound too tight and impede expansion of the gases causing low loaf volume.

General Evaluation rating is given for varieties which have been tested at least for two crop years. This evaluation takes into account the various grading factors and the results of the crop years as an over-all rating. The main defects and outstanding features are discussed. A variety which shows some promise with outstanding agronomic characteristics should be seriously considered and looked at in large plots, if it has not been previously, providing other sufficient information has been obtained. A sample which shows little promise should be discontinued.

FIELD PLOT NURSERY SAMPLES - 1965 CROP

Sixty-eight field plot nursery samples were received from 3 states and 5 stations. The data for the individual samples are given in Tables 1 through 5. In Table 6 are given the averages for the variety by state for the following varieties: Chris, Crim, Justin, and Selkirk, with the exception of Justin for the Fort Collins samples. The averages for these commercial varieties per location were used as a standard for judging the other samples in the field plots. The 1964 and 1965 averages also are given for these varieties for each of the states where the data is available. For the Colorado series, the Southwest Colorado samples were not included in the averages.

COLORADO SAMPLES

Twenty-two samples were received from two Colorado areas: Fort Collins and Southwest Colorado. Fifteen of these samples were commercial, named varieties; Canthatch, Chris, Crim, Lee, Lemhi 53, Manitou, Marquis, Saunders, Selkirk, and Thatcher. Five of these samples were unnamed varieties; Wisc. 255, B61-88, ND 229-1, B61-95, and ND 60-54. The results for each of these varieties for the individual stations are given in Tables 1 and 2. All of the Fort Collins samples generally exhibited weak dough characteristics and low absorptions. The Selkirk variety from Fort Collins had to be rated as unsatisfactory because of the very weak dough characteristics and minimum mixing time for baking evaluation, although it was included in the average results for the area.

The Fort Collins samples averaged slightly higher protein than the Southwest Colorado samples and the over-all baking evaluation was slightly better, probably due to the reflection of higher protein giving better grain and volume.

Wisc. 255 (C.I. 13588)

Kernel Characteristics - Satisfactory.

Milling Performance - Satisfactory.

Baking Evaluation - Satisfactory.

B61-88 (C.I. 13772)

Kernel Characteristics - Satisfactory.

Milling Performance - Satisfactory.

Baking Evaluation - Satisfactory.

ND 229-1 (C.I. 13589)

Kernel Characteristics - Satisfactory.

Milling Performance - Satisfactory.

Baking Evaluation - Satisfactory.

B61-95 (C.I. 13586)

Kernel Characteristics - Satisfactory.

Milling Performance - Satisfactory.

Baking Evaluation - Satisfactory.

NOTE: The sample from Southwest Colorado had very satisfactory kernel characteristics; however, the milling performance was satisfactory to questionable because of the tendency to show soft milling characteristics, no doubt due primarily to the low protein and large kernel size of the sample. This low protein was also reflected in the final baking evaluation score of unsatisfactory to questionable, as the sample exhibited dead dough and had minimum grain in the crumb and minimum loaf volume.

ND 60-54 (C.I. 13596)

Kernel Characteristics - Satisfactory.

Milling Performance - Satisfactory.

Baking Evaluation - Satisfactory.

NOTE: The sample from Southwest Colorado also had satisfactory kernel characteristics and, again, the milling performance was satisfactory to questionable probably due in some respect to the lower protein. There is only a slight difference in the proteins but at this percentage of protein the kernel characteristics would tend to change and begin to exhibit the influence of protein change. The baking performance is questionable and was one of the weaker doughs of the series from this station.

NORTH DAKOTA SAMPLES

Thirty-seven samples were received from 2 North Dakota stations: Dickinson and Williston. Twenty-five of these samples were name varieties of Canthatch, Chinook, Chris, Crim, Forx, Justin, Lee,

Manitou, Nordman, Pembina, Plainsman, Rescue, Selkirk, and Thatcher. Twelve of the samples were the unnamed varieties: Minnesota Sel. II-54-30, B61-95, ND 60-54, ND 264, ND 405, and ND 407. The average results of Chris, Crim, Justin, and Selkirk for the individual stations were used to judge the performance of the other samples from the respective stations. The results for each of these varieties, for the individual stations, are given in Tables 3 and 4. The unnamed varieties, on the whole, from Dickinson did not perform as well in baking evaluation as the samples from Williston.

II-54-30 (C.I. 13655)

Kernel Characteristics - Satisfactory.

Milling Performance - Satisfactory to Very Satisfactory.

Baking Evaluation - Questionable to Unsatisfactory. This selection continues to show minimum mixing requirements and also absorption.

General Evaluation - Questionable to Unsatisfactory. From two years of testing, this sample continues to show low absorption and short mixing. Although it has satisfactory kernel characteristics and excellent milling characteristics, the poor baking performance is the deciding factor of this selection.

B61-95 (C.I. 13586)

Kernel Characteristics - Satisfactory to Questionable. It has a tendency to be low in 1000 kernel weight and a minimum amount of large kernels.

Milling Performance - Satisfactory to Questionable. The sample from Williston shows a definite tendency to be soft in milling characteristics.

Baking Evaluation - Satisfactory to Questionable. The sample from Dickinson required the lowest absorption of the series and was approximately 4-1/2% below that of the average for the standard varieties and was therefore classified as unsatisfactory. This appeared to be the only shortcoming of the sample in its baking performance.

General Evaluation - Questionable. Due to the soft milling characteristics which have been exhibited, this selection would show little promise.

ND 60-54 (C.I. 13596)

Kernel Characteristics - Satisfactory.

Milling Performance - Satisfactory.

ND 60-54 (C.I. 13596) Cont'd.

Baking Evaluation - Satisfactory to Questionable. The mixing time is minimal for this sample.

General Evaluation - Questionable. From two years' testing this selection has shown minimum mixing time and would show little promise.

NOTE: However, this variety on a general evaluation could be considered a satisfactory replacement for Rescue and is at least equal to, if not better than Rescue.

ND 264 (C.I. 13569)

Kernel Characteristics - Satisfactory.

Milling Performance - Questionable to Satisfactory. Minimum extraction and shows definite tendency to be soft in milling characteristics.

Baking Evaluation - Questionable to Satisfactory. Low loaf volume.

ND 405 (C.I. 13779)

Kernel Characteristics - Satisfactory.

Milling Performance - Satisfactory.

Baking Evaluation - Satisfactory to Questionable. The sample from Dickinson gave extremely poor grain.

ND 407 (C.I. 13953)

Kernel Characteristics - Satisfactory.

Milling Performance - Satisfactory to Questionable. Low extraction and tendency to be soft in milling characteristics for the Dickinson sample.

Baking Evaluation - Questionable to Satisfactory. The absorption and mixing time for the selection were satisfactory, however, the grain for both stations was poor and especially true for the Dickinson sample. Also, the loaf volume was the lowest of all of the Dickinson samples.

WISCONSIN SAMPLES

Nine samples were received from the Madison, Wisconsin station. Two of these samples were unnamed varieties. Seven of the samples were the name varieties: Chris, Crim, Justin, Lathrop, Lee, Selkirk, and Thatcher. The results are given in Table 5.

6-12

Kernel Characteristics - Satisfactory.

Milling Performance - Satisfactory.

Baking Evaluation - Satisfactory.

General Evaluation - Questionable. This selection has been tested for the last 4 years and has given somewhat erratic results. In past performance it has definitely shown a tendency to give high ash in the flour which is not desirable. This year it did not show this. However, it does show approximately a 2% drop in protein from the wheat to flour during milling which would be undesirable. Baking performance was satisfactory this year, no doubt exhibited by the high protein in the flour and was the highest protein sample of the series submitted from Wisconsin. Because of the erratic results and apparent need for high protein in the sample to perform satisfactorily in the baking, it would appear that this selection shows little promise.

Wisc. 255 (C.I. 13588)

Kernel Characteristics - Satisfactory.

Milling Performance - Satisfactory.

Baking Evaluation - Satisfactory.

General Evaluation - Satisfactory. This selection, on occasion, has shown some minimum performances; however, the over-all performance of this selection would indicate that it shows promise as a new variety.

UNIFORM REGIONAL NURSERY SAMPLES - 1965 CROP

A total of 480 Uniform Regional Nursery samples were received. These samples represented 16 stations from 6 states. Two blends were made. Each blend comprised two stations where the wheats were compatible and of close origin; namely, Morris and St. Paul, Minnesota and a blend of Williston, North Dakota and Sidney, Montana. To determine the compatibility, the wheats must be within 1/2 percent in protein content, similar kernel size distribution, test weight within 1/2 pound, and the same kernel textures. Any of the samples, regardless of the origin, which show differences in the characteristics were considered not to be compatible and were milled as individual samples to eliminate any possible erroneous results due to incompatibility. Thus, a total of 420 samples were milled and baked, which included the blends and individual samples. Thirty samples were received from each of the stations. Twenty-one new varieties or selections were included for quality evaluation in the Uniform Regional Nursery samples. The remainder of the samples were the commercially named varieties of Chris, Crim, Justin, Lee, Manitou, Marquis, Pembina, Selkirk, and Thatcher.

Ninety samples were received from the 3 Minnesota stations of Crookston, Morris and St. Paul. The samples from Morris and St. Paul were blended. Data are given in Tables 7 and 8 for the Crookston samples and the blended samples, respectively.

Ninety samples were received from 3 stations in Montana: Bozeman, Havre, and Sidney. However, due to the similarity between the Sidney samples and the Williston samples of North Dakota, these stations were blended.

The data for the Bozeman, Havre, and Sidney-Williston blend are given in Tables 9, 10, and 11, respectively. The data for the Sidney-Williston blend are included with the two other stations from Montana for the Montana state averages.

One hundred and fifty samples were received from 5 stations in North Dakota: Casselton, Dickinson, Fargo, Minot, and Williston. However, the Williston samples were blended with Montana samples from Sidney. The data for the 4 North Dakota stations were included in the North Dakota averages and are given in Tables 12, 13, 14, and 15, respectively. Several of the samples from the Casselton station contained immature and green kernels. These have been noted in Table 12.

Sixty samples were received from 2 stations in South Dakota: Highmore and Watertown. The data are given for these samples in Tables 16 and 17.

Thirty samples were received from the Madison, Wisconsin station. The data are given in Table 18.

Sixty samples were received from 2 Wyoming stations: Laramie and Sheridan. The data are given for these samples in Tables 19 and 20. The Laramie, Wyoming samples were severely frost damaged. They were processed primarily to show the effect which frost damage can have upon the various wheat, milling and baking characteristics; therefore, these samples were not graded or included in the state averages. It will be noted from the data in Table 19 for these samples, the very deleterious effect upon the baking quality, primarily exhibited by the dead doughs (lifeless) and low loaf volume. Also, the mixing times are short and very poor mixogram patterns are obtained.

In Table 21, are given the average results for each of the 30 samples submitted from the 6 states and 15 stations, excluding the Laramie samples. The results for the kernel characteristics, milling performance, and mixogram patterns were obtained by averaging the results from the 13 tables, 7 through 20, excluding Table 19 (Laramie). However, the baking results differ from previous reports in that the flours from each of the stations or blends (excluding the Laramie samples), were blended in equal proportions and baked by two different baking methods using 100 grams of flour. The regular straight dough rich formula baking procedure was used for one test, while for the second procedure a mixing tolerance baking method was employed. Added to this year's table is an additional column entitled, "General Evaluation," which takes into consideration the general over-all performance of the samples. This will afford a ready reference.

For simplicity and brevity of the report, as in previous reports, each variety will be discussed from the general over-all average of the results given in Table 21, rather than the individual stations. The general evaluation given summarizes the results of the two or more years' results and/or the tolerance test. The evaluation is more meaningful for the over-all performance of the variety when at least two or more crop years are included.

In Table 22, the averages are given by state for the 4 main varieties of Chris, Crim, Justin, and Selkirk. This table gives a comparison of the varieties by state, as well as state averages of the four varieties for comparative purposes, and the 1965 grand average. The 1964 grand averages for the same four varieties are also given for comparison of the two crop years. In general, the 1965 crop has better kernel characteristics, approximately 1% less protein, and somewhat better milling results with approximately equal extractions, but 2 points lower mineral content compared to the 1964 crop. The mixing time is slightly longer and the mixogram pattern stronger although the dough characteristic is slightly mellower than the 1964 crop.

Another change incorporated this year was that of using the average results of the varieties Chris, Crim, Justin, and Selkirk, for each of the individual stations or blends as a standard. In previous years, an average standard of the spring wheat crop was used for comparison; thus, even named varieties were rated as unsatisfactory from stations where they did not perform as well as the standard. Therefore, when comparing results of a variety from two different stations which might be rated as satisfactory at both locations in this year's report, one station, in actuality, might be unsatisfactory compared with the other station. For example, a comparison of the mixing times between Casselton samples and the Sheridan, Wyoming samples shows the average for the Casselton samples is 4-1/2 min., while the Sheridan samples average 2-1/4 min. If the Casselton samples were used as a standard, the Sheridan samples would be unsatisfactory due to the extremely short mixing time which is 2-1/4 min. less than the Casselton samples. The state averages given in Table 22 are additional guides for the relative performance for the crop year by states.

The average results for the new varieties or selections were:

II-54-30 (C.I. 13655)

Kernel Characteristics - Satisfactory.

Milling Performance - Very Satisfactory.

Baking Evaluation - Questionable. The absorption and dough characteristics were minimum.

General Evaluation - Unsatisfactory to Questionable. Kernel characteristics have been variable during the years this variety has been tested. Milling performance has been good to excellent, however, the milling characteristics on an over-all basis are not quite as outstanding in 1965 as in previous years. The selection has shown a low bake absorption and minimum quality, poor interior and loaf volume. This year the average loaf volume was good on the blend; however, mixing tolerance was very poor, therefore, the over-all rating of the variety would have to be unsatisfactory to questionable. The selection shows no promise.

II-55-11 (C.I. 13773)

Kernel Characteristics - Very Satisfactory.

Milling Performance - Satisfactory. The selection did not show as good milling characteristics as the kernel characteristics would indicate.

Baking Evaluation - Satisfactory.

General Evaluation - Satisfactory. Based on 3 crop years, this variety has a tendency to give erratic results from different areas both in milling and baking, but does show some promise.

II-58-57 (C.I. 13825)

Kernel Characteristics - Satisfactory to Questionable. Low 1000 kernel weight and small kernel size distribution.

Milling Performance - Questionable to Unsatisfactory. Relatively high ash, low extraction, and definitely a tendency towards softness in the kernel milling characteristics.

Baking Evaluation - Satisfactory.

General Evaluation - Questionable to Unsatisfactory. Based on 2 years' performance of this variety, it definitely shows a low 1000 kernel weight, small kernel size distribution, low extraction, relatively high ash, and poor milling performance. Also, the baking results have been somewhat erratic for the 2 years; therefore, this selection would show little promise.

II-59-9 (C.I. 13826)

Kernel Characteristics - Satisfactory.

Milling Performance - Satisfactory.

Baking Evaluation - Satisfactory.

General Evaluation - Satisfactory to Questionable. The selection based on 2 crop years, has given satisfactory kernel characteristics, somewhat low extraction, satisfactory to questionable baking with somewhat erratic results, and the mixing tolerance is fair. This selection shows some promise.

61-107 (C.I. 13937)

Kernel Characteristics. - Very Satisfactory.

Milling Performance - Questionable. Selection shows minimum extraction and a tendency to be soft in milling characteristics.

Baking Evaluation - Satisfactory.

61-107 (C.I. 13937) Cont'd.

General Evaluation - Satisfactory to Questionable. This variety does have some questionable milling characteristics, and the mixing tolerance is minimum; however, the selection does show some promise.

B60-82 (C.I. 13823)

Kernel Characteristics - Satisfactory.

Milling Performance - Questionable. Minimum extraction, relatively high ash.

Baking Evaluation - Questionable to Satisfactory. The general appearance of the loaf is poor.

General Evaluation - Questionable. Based on 2 years' performance of this variety, the milling has definitely been questionable to unsatisfactory showing low extraction. The kernel characteristics have been questionable to satisfactory, primarily due to 1000 kernel weight and small kernel size distribution. The baking evaluation has been satisfactory to questionable and the selection this year showed a poor tolerance to extended mixing. The selection shows little promise.

B61-89 (C.I. 13946)

Kernel Characteristics - Satisfactory.

Milling Performance - Questionable to Unsatisfactory. Low extraction, high ash, and soft milling characteristics.

Baking Evaluation - Satisfactory.

General Evaluation - Questionable to Unsatisfactory. The general evaluation based primarily on the poor milling characteristics and the lack of tolerance to extended mixing. Selection shows little promise.

B61-95 (C.I. 13586)

Kernel Characteristics - Satisfactory.

Milling Performance - Questionable. Low extraction and tendency towards soft milling characteristics.

Baking Evaluation - Satisfactory to Questionable.

General Evaluation - Questionable to Unsatisfactory. Based on 4 crop years, the variety has consistently shown low extraction and a

B61-95 (C.I. 13586) Cont'd.

tendency toward soft milling characteristics. The 1000 kernel weight and small kernel size distribution in past years have also been kernel characteristics which were undesirable. The baking performance has not been outstanding and generally has shown minimum absorption and somewhat poor loaf interior. The tolerance of mixing is minimum. This selection shows no promise as an over-all spring wheat.

ND 60-54 (C.I. 13596)

Kernel Characteristics - Satisfactory.

Milling Performance - Satisfactory.

Baking Performance - Questionable to Satisfactory. The absorption and grain are minimum.

General Evaluation - Questionable to Satisfactory. Based on 2 crop years, this selection has shown satisfactory to questionable kernel characteristics with a tendency to have small kernel size distribution. However, this was not the case this past year. The milling performance last year was questionable with low extraction as the primary cause. This year it is minimum but satisfactory. The baking evaluation continues to be questionable to satisfactory, primarily due to minimum mixing time and still continues to show a somewhat inferior interior of the loaf. The mixing tolerance of this selection is fair and the variety does show some promise. This variety would be a satisfactory replacement for Rescue.

ND 264 (C.I. 13569)

Kernel Characteristics - Satisfactory.

Milling Performance - Questionable. The selection gives minimum of extraction and relatively high ash. Also, the protein spread between the flour and wheat is the highest for all the selections.

Baking Evaluation - Questionable. The selection had relatively low loaf volume and the tendency toward a weak dough.

General Evaluation - Questionable to Unsatisfactory. The rating of this variety is based on 4 crop years and shows it definitely gives inconsistent results from different areas. The milling performance is generally poor. It has a minimum loaf volume and the mixing tolerance is only minimum. This variety shows no promise.

ND 321 (C.I. 13952)

Kernel Characteristics - Satisfactory.

Milling Performance - Questionable. Selection gives low extraction and tendency toward soft milling characteristics.

Baking Evaluation - Satisfactory. The selection was rated as satisfactory but the color is down somewhat on an average this year.

General Evaluation - Satisfactory to Questionable. This rating is based primarily on the milling characteristics. Selection shows some promise.

ND 363 (C.I. 13828)

Kernel Characteristics - Satisfactory.

Milling Performance - Satisfactory.

Baking Evaluation - Satisfactory.

General Evaluation - Satisfactory to Questionable. Based on two crop years' performance this selection has shown satisfactory kernel characteristics and from questionable to satisfactory milling performance with a tendency to give minimum extraction. The baking evaluation has been satisfactory to questionable in past years, showing a tendency toward minimum mixing time. This year it shows some tendency to lack tolerance to extended mixing. This variety does show some promise.

ND 405 (C.I. 13779)

Kernel Characteristics - Satisfactory.

Milling Performance - Satisfactory.

Baking Evaluation - Satisfactory.

General Evaluation - Questionable. This variety is rated on an over-all basis of 3 crop years. Previous crop years have shown low extraction and this year showed a minimum but satisfactory extraction. In past tests it has shown poor loaf interior. This year it shows lack of tolerance to extended mixing. The variety shows some promise.

ND 407 (C.I. 13953)

Kernel Characteristics - Satisfactory.

Milling Performance - Questionable. Low extraction and tendency toward soft milling characteristics.

Baking Evaluation - Satisfactory.

General Evaluation - Questionable. Because of the tendency toward soft milling characteristics and low extraction the selection would have to be rated as questionable. Baking evaluation is satisfactory and the tolerance to extended mixing was very good, therefore, it does show some promise.

ND 442 (C.I. 13954)

Kernel Characteristics - Satisfactory.

Milling Performance - Satisfactory. This selection, however, does have a tendency toward low extraction.

Baking Evaluation - Satisfactory to Questionable. Selection tends to have minimum of mixing time and definite tendency toward poor interior of the loaf.

General Evaluation - Satisfactory to Questionable. The general characteristics of the loaf and lack of tolerance to mixing are the main factors for the questionable rating. However, the variety shows some promise.

ND 455 (C.I. 13955)

Kernel Characteristics - Satisfactory.

Milling Performance - Satisfactory. Although the selection showed minimum of extraction.

Baking Evaluation - Questionable. Selection had minimum absorption, minimum dough characteristics, and poor interior of loaf.

General Evaluation - Questionable to Satisfactory. The poor general loaf characteristics, lack of tolerance to mixing, and minimum milling performance show that this selection would have little promise.

ND 456 (C.I. 13956)

Kernel Characteristics - Satisfactory.

Milling Performance - Satisfactory.

Baking Evaluation - Questionable to Unsatisfactory. Minimum absorption, weak dough, and relatively short mixing time.

General Evaluation - Questionable to Unsatisfactory. Due primarily to the weak dough, this selection would show little promise.

ND 457 (C.I. 13957)

Kernel Characteristics - Satisfactory.

Milling Performance - Satisfactory.

Baking Evaluation - Satisfactory.

General Evaluation - Satisfactory. From the data on the samples submitted this year, this variety shows promise.

SD 624 (C.I. 13947)

Kernel Characteristics - Satisfactory.

Milling Performance - Satisfactory.

Baking Evaluation - Unsatisfactory. Selection has minimum absorption, minimum mixing time, and very poor dough as well as poor color and low loaf volume.

General Evaluation - Unsatisfactory. Based on the baking performance, this selection shows no promise.

SD 625 (C.I. 13948)

Kernel Characteristics - Satisfactory.

Milling Performance - Satisfactory.

Baking Evaluation - Unsatisfactory. Short mixing time and poor dough characteristics.

General Evaluation - Unsatisfactory. Because of unsatisfactory baking performance, lack of tolerance to mixing and poor mixogram pattern, the selection shows no promise.

SD 626 (C.I. 13949)

Kernel Characteristics - Satisfactory.

Milling Performance - Satisfactory.

Baking Evaluation - Unsatisfactory. Low absorption, short mixing time, weak dough, and poor grain interior.

General Evaluation - Unsatisfactory. Baking characteristics and poor tolerance to mixing show this selection to have no promise.

MONTANA SAWFLY YIELD NURSERY SAMPLES

Forty-eight samples were received from 3 stations in Montana. Sixteen samples from the stations of Cutbank, Dutton, and Sidney were received. Five of these samples from each station were name varieties: Chinook, Cypress, Rescue, Sawtana, and Thatcher. Eleven of these samples from each station were unnamed varieties. The data for these samples for the individual stations are given in Tables 23 through 25. In Table 26 are given the average results of the 3 stations for each of the varieties with an additional general evaluation column. This year, for each station, the varieties of Chinook, Rescue, and Thatcher were averaged for a standard performance and the results of the individual samples were compared to this average.

The average results for the new or unnamed varieties were:

60-54 (C.I. 13596)

Kernel Characteristics - Very Satisfactory.

Milling Performance - Satisfactory.

Baking Evaluation - Satisfactory.

General Evaluation - Satisfactory to Questionable. The rating is based on 3 crop years. The 1964 crop gave minimum mixing time and low absorption, however, the 1963 crop baked satisfactorily. This variety shows some promise.

61-107 (C.I. 13937)

Kernel Characteristics - Satisfactory.

Milling Performance - Satisfactory.

Baking Evaluation - Questionable. The absorption was minimum and the dough characteristics tended to be weak.

General Evaluation - Questionable to Unsatisfactory. Based on 2 crop years, the baking performance has been minimum and has consistently shown a tendency to give weak dough characteristics and low absorption. This selection shows little promise.

62-133

Kernel Characteristics - Satisfactory.

Milling Performance - Satisfactory.

Baking Evaluation - Questionable. The selection gives minimum absorption, and shows a definite tendency toward weak dough.

General Evaluation - Questionable. Based on this year's results the selection has minimum absorption and weak dough characteristics, therefore, would show little promise.

63-114

Kernel Characteristics - Very Satisfactory.

Milling Performance - Satisfactory.

Baking Evaluation - Questionable. Mixing time is the shortest of all the samples submitted.

General Evaluation - Questionable. Based on this year's performance this selection would show no promise because of the short mixing requirement.

B61-23 (C.I. 13832)

Kernel Characteristics - Satisfactory.

Milling Performance - Satisfactory.

Baking Evaluation - Satisfactory.

General Evaluation - Satisfactory to Questionable. Based on 2 crop years, the selection would have to be rated satisfactory to questionable although it was rated as satisfactory this year because of the short mixing time and poor interior shown in last year's results. However, this selection shows some promise.

B61-69 (C.I. 13831)

Kernel Characteristics - Satisfactory.

Milling Performance - Satisfactory.

Baking Evaluation - Satisfactory to Questionable. Interior of loaf somewhat inferior for good quality.

B61-69 (C.I. 13831) Cont'd.

General Evaluation - Satisfactory to Questionable. Based on 2 crop years, the selection has given somewhat erratic results thus giving it the general rating of satisfactory to questionable. The variety does show some promise.

B64-1 (C.I. 13950)

Kernel Characteristics - Questionable to Unsatisfactory. Low test weight, per kernel size distribution, and low 1000 kernel weight.

Milling Performance - Questionable. Low extraction and tendency toward soft milling characteristics.

Baking Evaluation - Unsatisfactory. Low absorption, poor or weak dough, poor grain interior, and low loaf volume.

General Evaluation - Unsatisfactory. This variety is down in all characteristics, therefore, shows no promise. The results of the Sidney sample were poor.

B64-23 (C.I. 13951)

Kernel Characteristics - Unsatisfactory to Questionable. Low test weight, small kernel size distribution, and low 1000 kernel weight.

Milling Performance - Unsatisfactory. Minimum extraction, high ash, and tendency toward soft kernel characteristics.

Baking Evaluation - Questionable. Minimum absorption.

General Evaluation - Unsatisfactory to Questionable. Kernel characteristics and milling characteristics are the main reasons for this evaluation. Selection shows little promise.

L 7167-112

Kernel Characteristics - Satisfactory.

Milling Performance - Satisfactory.

Baking Evaluation - Questionable. Minimum mixing time.

General Evaluation - Questionable. Evaluation based primarily on the baking performance. Selection shows some promise.

L 7167-194

Kernel Characteristics - Satisfactory to Questionable. Minimum test weight and kernel size distribution.

Milling Performance - Satisfactory to Questionable. Maximum mineral content.

Baking Evaluation - Questionable. Minimum absorption, weak dough characteristics and somewhat poor color.

General Evaluation - Questionable. The selection shows little promise based on the minimum milling performance, weak dough characteristics and erratic results.

SC 7531-2

Kernel Characteristics - Satisfactory.

Milling Performance - Satisfactory.

Baking Evaluation - Satisfactory to Questionable. Minimum mixing, somewhat poor loaf characteristics, and minimum loaf volume.

General Evaluation - Satisfactory to Questionable. Baking evaluations show some questionable characteristics. The Sidney sample was definitely down. This selection shows some promise.

TABLE 1

FIELD PLOT NURSERY SAMPLES

Fort Collins, Colorado

1965 CROP

Variety or Sel. No.	C.I. No.	T.W. 1/ #/Bu.	1000 Kwt.	Kernel Lg. Med. Sm.	Pot. Yld.	Wht. Min.	Wht. Pro.	Kern. Char.	Flr. Ext.	Flr. Min. @ 65% Ex.	Flr. Pro.	Mlg. Char.	Mlg. Per.	Mix. Abs.	Mix. Pat.	Bake Abs.	Mix. Time	Dough Char.	Crumb Color	Crumb Grain	Loaf Vol.	Bake Eval.		
				%	%	%	%	%	%	%	%	%	%	%	%	%		%	%	%	%	%		
Canthatch	13345	61.5	29.9	52	46	2	75.5	1.78	12.1	S-Q	64.3	.42	11.0	N-S	Q	59.3	3	59.3	3-1/4	W	110	90 I	825 S-Q	
	13751	63.0	31.7	51	47	2	75.5	1.82	12.8	S	65.3	.40	11.3	N-S	S-Q	60.3	2	60.3	2-3/4	W	105	95 SII	840 S	
	13465	60.8	35.7	73	25	2	76.6	1.82	11.9	S	66.1	.37	10.7	N	S	61.0	5	61.0	4-3/4	W	110 W	90 IO	795 S	
	Crim	13465	60.8	35.7	73	25	2	76.6	1.82	11.9	S	66.1	.37	10.7	N	S	61.0	5	61.0	4-3/4	W	110 W	90 IO	795 S
Manitou	12488	61.4	36.4	66	32	2	76.2	1.73	11.8	S	63.3	.39	10.5	N-S	Q	58.7	4	59.7	4	W	105 W	90 OI	755 S-Q	
	13775	61.2	29.9	46	52	2	75.2	1.74	11.8	S-Q	66.3	.41	11.7	N	S	60.0	2	60.0	3	M	105	90	850 S	
	Marquis	3641	60.7	28.1	27	69	4	74.2	1.82	10.4	Q	63.4	.42	9.3	N	S-Q	56.5	3	56.5	3-3/4	WSLD	100 SIC	90 C	725 U
	Saunders	12567	60.1	31.2	51	46	3	75.4	1.72	12.2	S	63.5	.44	10.3	N-S	Q	58.7	4	58.7	4	VW	110 SIC	90 0	745 U
Selkirk	13100	60.5	36.2	66	32	2	76.2	1.85	12.1	S	67.9	.40	10.7	N	S	59.7	2	59.7	2-3/4	VW	100	90 S10	750 U	
	Thatcher	10003	61.0	29.6	44	53	3	75.1	1.76	11.8	S-Q	62.3	.45	11.0	N-S	Q	58.3	3	59.3	3-1/2	W	100	90 I	790 S
	Whsc. 255	13588	62.5	38.2	68	31	1	76.4	1.86	12.9	S	66.2	.41	11.7	N	S	61.9	4	61.9	3-3/4	M	105	90 0	885 S
	B61-88	13772	63.1	34.7	68	30	2	76.3	1.82	12.4	S	66.1	.40	11.1	N	S	62.3	4	62.3	3-3/4	M	100	95	835 S
ND 229-1	13589	62.0	33.9	73	25	2	76.6	1.75	11.7	S	67.6	.39	10.4	N	S	61.0	5	61.0	4	M	105	90 I	790 S	
	B61-95	13586	63.8	36.2	66	33	1	76.3	1.76	11.9	S	63.4	.38	10.5	N	S	59.3	3	60.3	4	M	110 W	95	850 S
	ND 60-54	13596	62.2	42.2	73	25	2	76.6	1.75	11.4	S	67.5	.37	10.4	N	S	59.0	3	60.0	3	W	110 SIC	90 OSII	785 S

1/ Clean dry - subtract 1#/bu. for dockage free T.W.

2/ 14% moisture basis.

3/ S - Satisfactory, Q - Questionable, U - Unsatisfactory, V - Very.

4/ N - Normal, H - Hard, S - Soft.

5/ Refer to reference mixogram for numerical curve pattern.

6/ B - Bucky, S - Strong, M - Mellow, W - Weak, D - Dead, V - Very.

7/ C - Creamy, G - Gray, D - Dull, SI - Slightly, V - Very, B - Bright, W - White.

8/ O - Open, I - Irregular, S - Soggy, T - Thick Wall, SI - Slightly, C - Close.

TABLE 2

FIELD PLOT NURSERY SAMPLES

Southwest Colorado

1965 CROP

Variety or Sel. No.	C.I. No.	T.W. 1/ #/Bu.	1000 Kwt.	Kernel Size		Pot. Yld.	Wht. Min.	Wht. Pro.	Kern. Char.	Flr. Ext.	Min.@ 65%Ex.	Flr. Pro.	Mlg. Char.	Mlg. Per.	Mix. Abs.	Mix. Pat.	Bake Abs.	Bake Time	Dough Char.	Crumb Color	Crumb Grain	Loaf Vol.	Bake Eval.
				g.	%	%	2/ %	2/ %	3/ %	%	2/ %	2/ %	4/ %	3/ %	2/ %	5/ %	2/ %	min.	6/ %	7/ %	8/ %	cc.	3/ %
Canthatch	13345	61.3	35.3	75	24	1	1.69	11.6	S	65.1	.44	10.7	N-S	Q	61.9	2	61.9	2-1/2	M	110 SLC	80 OI	770	Q
Chris	13751	61.8	33.2	65	34	1	1.75	11.6	S	64.1	.49	10.8	N-S	Q	63.8	3	63.8	2-3/4	M-W	110	90	740	S-Q
Crim	13465	61.5	38.8	84	14	2	1.74	11.2	VS	65.4	.41	10.4	N-S	S-Q	64.7	4	64.7	3-1/2	M-W	105	80 I	745	S
Lemhi 53	13258	60.0	39.8	82	17	1	1.61	9.0	VS	61.7	.37	7.3	S	U	53.7	1	53.7	2-1/4	D	100 C	50 T	490	U
Manitou	13775	60.6	32.5	70	28	2	1.71	12.0	S	65.8	.43	10.9	N-S	S-Q	62.5	2	62.5	2-1/4	M	100 SLC	80 I	765	Q
Marquis	3641	61.9	37.0	79	19	2	1.70	11.5	S	65.1	.52	10.4	N-S	U	62.5	2	62.5	2-1/4	M	105 SLC	90	790	Q-S
B61-95	13586	63.4	38.0	83	16	1	1.70	10.5	VS	64.2	.42	9.6	N-S	S-Q	61.9	2	61.9	2-3/4	SLD	105	80 IO	715	U-Q
ND 60-54	13596	62.3	41.3	75	23	2	1.71	11.1	S	69.4	.41	10.0	N-S	S-Q	62.5	2	62.5	2-1/4	W	110 C	90	725	Q

1/ Clean dry - subtract 1#/bu. for dockage free T.W.

2/ 14% moisture basis.

3/ S - Satisfactory, Q - Questionable, U - Unsatisfactory, V - Very.

4/ N - Normal, H - Hard, S - Soft.

5/ Refer to reference mixogram for numerical curve pattern.

6/ B - Bucky, S - Strong, M - Mellow, W - Weak, D - Dead, V - Very.

7/ C - Creamy, G - Gray, D - Dull, SL - Slightly, V - Very, B - Bright, W - White.

8/ O - Open, I - Irregular, S - Seggy, T - Thick Wall, SL - Slightly, C - Close.

TABLE 3

FIELD PLOT NURSERY SAMPLES

Dickinson, North Dakota

1965 CROP

Variety or Sel. No.	C.I. No.	T.W. #/Bu.	1000 Kwt.	Kernel Lg.	Med. Sm.	Pot. Yld.	Wht. Min.	Wht. Pro.	Kern. Char.	Flr. Ext.	Min.@ 65%Ex.	Flr. Pro.	Mlg. Char.	Mlg. Per.	Mix. Abs.	Mix. Pat.	Bake Abs.	Mix. Time	Dough Char.	Crumb Color	Crumb Grain	Loaf Vol.	Bake Eval.		
				%	%	%	%	%	%	%	%	%	%	%	%	%	%	min.	6/	7/	8/	3/	3/		
Canthatch	13365	60.8	25.4	9	88	3	73.3	1.86	13.8	S-Q	.44	13.6	N	S	61.0	3	61.0	2-1/2	M-S	105	85	I	970	Q-U	
	13751	60.9	29.2	39	60	1	74.9	1.88	13.8	S	.44	13.6	N-S	S-Q	63.5	4	63.5	3-1/2	M-S	110	90	S	945	S	
	13465	60.8	27.9	31	67	2	74.5	1.88	13.8	S	.45	13.2	N-S	S-Q	63.5	3	63.5	3-1/2	M-S	110	90	895	S		
	13462	58.7	28.3	21	77	2	74.0	1.97	15.0	S	.45	13.4	N	S	65.0	5	65.0	3-3/4	S	95	90	900	S		
Justin	12488	61.2	28.8	23	75	2	74.1	1.82	14.0	S	.48	13.4	N-S	S-Q	63.5	3	63.5	2-1/2	M-S	100	SIC	95	SII	925	Q
Manitou	13775	59.8	24.6	6	91	3	73.2	1.91	14.3	S-Q	.45	13.9	N	S	61.3	3	61.3	3	M-S	105	C	85	935	Q-S	
	59.4	30.1	27	71	2	74.3	1.94	13.9	S	.46	13.4	N	S	61.6	2	61.6	2-1/2	M-S	100	95	S	895	Q		
	13332	59.3	24.1	6	91	3	73.2	1.90	14.2	Q-S	.44	13.9	N	S	61.3	5	61.3	4	S	105	SIC	80	1005	S-Q	
	59.1	30.1	26	72	2	74.2	1.98	13.9	S	.45	13.4	N	S	61.3	3	61.3	2-3/4	M-S	105	100	S	875	Q		
Seikirk	13100	60.2	26.0	8	89	3	73.3	2.02	14.4	S-Q	.45	14.0	N	S	60.3	4	60.3	3-1/2	S	110	95	960	S-Q		
Thatcher	10003	58.8	25.4	7	91	2	73.3	1.89	13.9	S-Q	.48	13.5	N	S	60.0	2	60.0	2-1/2	M-S	105	W	95	1000	Q	
	13655	61.8	27.5	11	87	2	73.5	1.87	13.5	S	.43	13.1	N	S	60.3	3	60.3	2-3/4	M-S	110	SIC	90	950	Q	
	13586	61.0	25.9	7	90	3	73.2	1.91	13.3	S-Q	.42	12.7	N	S	58.7	3	58.7	3-3/4	M-S	105	W	95	960	U	
	B61-95	13596	59.4	27.5	8	88	4	73.2	1.97	13.7	S	.44	13.4	N	S	63.5	3	63.5	3	M-S	110	SIC	95	905	S
ND 60-54	13569	59.1	31.9	46	52	2	75.2	1.88	13.6	S	.44	12.5	N-S	S-Q	63.8	4	63.8	3-1/4	M	100	W	80	845	Q-S	
ND 405	13779	59.7	34.2	48	51	1	75.4	1.88	14.4	S	.43	13.6	N	S	64.4	4	64.4	3-1/2	M-S	105	SIC	75	0	985	Q
ND 407	13953	62.4	34.7	58	40	2	75.8	1.91	14.3	S	.40	13.0	N-S	Q	63.5	4	63.5	3	M-S	110	SIC	70	0	830	Q

1/ Clean dry - subtract 1#/bu. for dockage free T.W.

2/ 14% moisture basis.

3/ S - Satisfactory, Q - Questionable, U - Unsatisfactory, V - Very.

4/ N - Normal, H - Hard, S - Soft.

5/ Refer to reference mixogram for numerical curve pattern.

6/ B - Bucky, S - Strong, M - Mellow, W - Weak, D - Dead, V - Very.

7/ C - Creamy, G - Gray, D - Dull, SI - Slightly, V - Very, B - Bright, W - White.

8/ O - Open, I - Irregular, S - Soggy, T - Thick Wall, SI - Slightly, C - Close.

TABLE 4

FIELD PLOT NURSERY SAMPLES

Williston, North Dakota

1965 CROP

Variety or Sel. No.	C.I. No.	T.W. #/Bu.	1000 Kwt.	Kernel Size			Pot. Yld.	Wht. Min.	Wht. Pro.	Kern. Char.	Flr. Ext.	Min.@ 65%Ex.	Flr. Pro.	Mlg. Char.	Mlg. Per.	Mix. Abs.	Mix. Pat.	Bake Abs.	Mix. Time	Dough Char.	Crumb Color	Crumb Grain	Loaf Vol.	Bake Eval.																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																		
				Lg.	Med.	Sm.																			%	%	%	%	%	%	%	%	%	%	%	%	%	%	%	%	%	%	%	%	%	%	%	%	%	%	%	%	%	%	%	%	%	%	%	%	%	%	%	%	%	%	%	%	%	%	%	%	%	%	%	%	%	%	%	%	%	%	%	%	%	%	%	%	%	%	%	%	%	%	%	%	%	%	%	%	%	%	%	%	%	%	%	%	%	%	%	%	%	%	%	%	%	%	%	%	%	%	%	%	%	%	%	%	%	%	%	%	%	%	%	%	%	%	%	%	%	%	%	%	%	%	%	%	%	%	%	%	%	%	%	%	%	%	%	%	%	%	%	%	%	%	%	%	%	%	%	%	%	%	%	%	%	%	%	%	%	%	%	%	%	%	%	%	%	%	%	%	%	%	%	%	%	%	%	%	%	%	%	%	%	%	%	%	%	%	%	%	%	%	%	%	%	%	%	%	%	%	%	%	%	%	%	%	%	%	%	%	%	%	%	%	%	%	%	%	%	%	%	%	%	%	%	%	%	%	%	%	%	%	%	%	%	%	%	%	%	%	%	%	%	%	%	%	%	%	%	%	%	%	%	%	%	%	%	%	%	%	%	%	%	%	%	%	%	%	%	%	%	%	%	%	%	%	%	%	%	%	%	%	%	%	%	%	%	%	%	%	%	%	%	%	%	%	%	%	%	%	%	%	%	%	%	%	%	%	%	%	%	%	%	%	%	%	%	%	%	%	%	%	%	%	%	%	%	%	%	%	%	%	%	%	%	%	%	%	%	%	%	%	%	%	%	%	%	%	%	%	%	%	%	%	%	%	%	%	%	%	%	%	%	%	%	%	%	%	%	%	%	%	%	%	%	%	%	%	%	%	%	%	%	%	%	%	%	%	%	%	%	%	%	%	%	%	%	%	%	%	%	%	%	%	%	%	%	%	%	%	%	%	%	%	%	%	%	%	%	%	%	%	%	%	%	%	%	%	%	%	%	%	%	%	%	%	%	%	%	%	%	%	%	%	%	%	%	%	%	%	%	%	%	%	%	%	%	%	%	%	%	%	%	%	%	%	%	%	%	%	%	%	%	%	%	%	%	%	%	%	%	%	%	%	%	%	%	%	%	%	%	%	%	%	%	%	%	%	%	%	%	%	%	%	%	%	%	%	%	%	%	%	%	%	%	%	%	%	%	%	%	%	%	%	%	%	%	%	%	%	%	%	%	%	%	%	%	%	%	%	%	%	%	%	%	%	%	%	%	%	%	%	%	%	%	%	%	%	%	%	%	%	%	%	%	%	%	%	%	%	%	%	%	%	%	%	%	%	%	%	%	%	%	%	%	%	%	%	%	%	%	%	%	%	%	%	%	%	%	%	%	%	%	%	%	%	%	%	%	%	%	%	%	%	%	%	%	%	%	%	%	%	%	%	%	%	%	%	%	%	%	%	%	%	%	%	%	%	%	%	%	%	%	%	%	%	%	%	%	%	%	%	%	%	%	%	%	%	%	%	%	%	%	%	%	%	%	%	%	%	%	%	%	%	%	%	%	%	%	%	%	%	%	%	%	%	%	%	%	%	%	%	%	%	%	%	%	%	%	%	%	%	%	%	%	%	%	%	%	%	%	%	%	%	%	%	%	%	%	%	%	%	%	%	%	%	%	%	%	%	%	%	%	%	%	%	%	%	%	%	%	%	%	%	%	%	%	%	%	%	%	%	%	%	%	%	%	%	%	%	%	%	%	%	%	%	%	%	%	%	%	%	%	%	%	%	%	%	%	%	%	%	%	%	%	%	%	%	%	%	%	%	%	%	%	%	%	%	%	%	%	%	%	%	%	%	%	%	%	%	%	%	%	%	%	%	%	%	%	%	%	%	%	%	%	%	%	%	%	%	%	%	%	%	%	%	%	%	%	%	%	%	%	%	%	%	%	%	%	%	%	%	%	%	%	%	%	%	%	%	%	%	%	%	%	%	%	%	%	%	%	%	%	%	%	%	%	%	%	%	%	%	%	%	%	%	%	%	%	%	%	%	%	%	%	%	%	%	%	%	%	%	%	%	%	%	%	%	%	%	%	%	%	%	%	%	%	%	%	%	%	%	%	%	%	%	%	%	%	%	%	%	%	%	%	%	%	%	%	%	%	%	%	%	%	%	%	%	%	%	%	%	%	%	%	%	%	%	%	%	%	%	%	%	%	%	%	%	%	%	%	%	%	%	%	%	%	%	%	%	%	%	%	%	%	%	%	%	%	%	%	%	%	%	%	%	%	%	%	%	%	%	%	%	%	%	%	%	%	%	%	%	%	%	%	%	%	%	%	%	%	%	%	%	%	%	%	%	%	%	%	%	%	%	%	%	%	%	%	%	%	%	%	%	%	%	%	%	%	%	%	%	%	%	%	%	%	%	%	%	%	%	%	%	%	%	%	%	%	%	%	%	%	%	%	%	%	%	%	%	%	%	%	%	%	%	%	%	%	%	%	%	%	%	%	%	%	%	%	%	%	%	%	%	%	%	%	%	%	%	%	%	%	%	%	%	%	%	%	%	%	%	%	%

1/ Clean dry - subtract 1#/bu. for dockage free T.W.

2/ 14% moisture basis.

3/ S - Satisfactory, Q - Questionable, U - Unsatisfactory, V - Very.

4/ N - Normal, H - Hard, S - Soft.

5/ Refer to reference mixogram for numerical curve pattern.

6/ B - Bucky, S - Strong, M - Mellow, W - Weak, D - Dead, V - Very.

7/ C - Creamy, G - Gray, D - Dull, SI - Slightly, V - Very, B - Bright, W - White.

8/ O - Open, I - Irregular, S - Soggy, T - Thick Wall, SI - Slightly, C - Close.

TABLE 5

FIELD PLOT NURSERY SAMPLES

Madison, Wisconsin

1965 CR0P

Variety or Sel. No.	C.I. No.	T.W. 1/ #/Bu.	1000 Kwt. g.	Kernel Size		Pot. Yld. %	Wht. Min. %	Wht. Pro. %	Kern. Char. %	Flr. Ext. %	Min. @ 65% Ex.		Flr. Pro. %	Mlg. Char. %	Mlg. Per. %	Mix. Abs.		Bake Abs. %	Mix. Time min.	Dough Char. %	Crumb Color	Crumb Grain g/	Loaf Vol. cc.	Bake Eval. %
				Ig.	Mad. Sm.						2/	2/				2/	2/							
Chris	13751	62.9	31.9	59	40	1	75.9	1.73	15.2	S	65.7	.38	14.0	N	S	64.2	3	64.2	2-3/4	M-S	100	80 0	950	S
Crim	13465	62.8	37.3	76	23	1	76.8	1.69	13.6	S	66.0	.40	12.6	N	S	63.8	5	63.8	4-1/4	S	105 W	90 0	895	S
Justin	13462	62.9	35.2	76	23	1	76.8	1.84	15.0	S	68.3	.36	13.6	N	S	62.8	5	62.8	3-3/4	S	100	90 I	870	S
Lathrop	13457	62.2	38.2	69	30	1	76.4	1.73	12.4	S	70.4	.37	11.2	N	S	61.0	5	61.0	3-1/2	W	105 SLC	95	895	U-Q
Lee	12448	62.6	37.3	70	29	1	76.5	1.73	12.9	S	61.7	.42	12.1	N-S	Q	61.0	5	61.0	3-1/2	M	115 BW	90	860	S-Q
Selkirk	13100	61.1	37.7	66	33	1	76.3	1.82	12.4	S	67.6	.42	11.4	N	S	59.3	3	59.3	3-1/4	W	95	95 S10	790	U
Thatcher	10003	61.9	31.2	46	52	2	75.2	1.71	14.3	S	64.9	.44	13.1	N-S	Q	61.0	4	61.0	3	M	105	95	915	Q
6-12	60.8	37.5	58	41	1	75.9	1.71	16.3	S	67.4	.42	14.4	N	S	S	64.7	5	64.7	3-1/2	M-S	100	95 S11	965	S
Wisc. 255	13588	62.7	38.5	69	30	1	76.4	1.75	14.5	S	66.6	.42	13.4	N	S	64.4	4	64.4	3-1/4	M-S	105	95 S10	910	S

1/ Clean dry - subtract 1#/bu. for dockage free T.W.

2/ 14% moisture basis.

3/ S - Satisfactory, Q - Questionable, U - Unsatisfactory, V - Very.

4/ N - Normal, H - Hard, S - Soft.

5/ Refer to reference mixogram for numerical curve pattern.

6/ B - Bucky, S - Strong, M - Mellow, W - Weak, D - Dead, V - Very.

7/ C - Creamy, G - Gray, D - Dull, S1 - Slightly, V - Very, B - Bright, W - White.

8/ O - Open, I - Irregular, S - Soggy, T - Thick Wall, S1 - Slightly, C - Close.

TABLE 6

FIELD PLOT STATE AVERAGES

1965 CROP

Variety or Sel. No.	C. I. No.	T. W. 1/ #/Bu.	1000 Kwt.	Kernel Lg.	Size Med. Sm.	Pot. Yld.	Wht. Min. 2/ %	Wht. Pro. 2/ %	Kern. Char. 3/ %	Flr. Ext. 2/ %	Min. @ 65% Ex. Pro. 2/ %	Flr. Char. 4/ %	Mlg. Per. 3/ %	Mix. Abs. 2/ %	Mix. Pat. 5/ %	Bake Abs. 2/ %	Mix. Time 6/ min.	Dough Char. 6/ %	Crumb Color 7/ %	Crumb Grain 8/ %	Loaf Vol. 9/ cc.	Bake Eval. 3/ %	
COLORADO																							
Chris	13751	63.0	31.7	51	47	2	75.5	1.82	12.8	S	65.3	.40	11.3	N-S	S-Q	60.3	2	60.3	2-3/4	W	105	95 S11	840 S
Crim	13465	60.8	35.7	73	25	2	76.6	1.82	11.9	S	66.1	.37	10.7	N S	S	61.0	5	61.0	4-3/4	W	110 W	90 IO	795 S
Selkirk	13100	60.5	36.2	66	32	2	76.2	1.85	12.1	S	67.9	.40	10.7	N S	S	58.7	2	59.7	2-3/4	WV	100	90 S10	750 U
1965 Average 2/ 1964 Average 2/ No samples in 1964.		61.4	34.5	63	35	2	76.1	1.83	12.3		66.4	.39	10.9			60.0	3	60.3	3-1/2		105	92	795
NORTH DAKOTA																							
Chris	13751	61.7	27.7	24	75	1	74.1	1.76	14.5	S	65.9	.40	14.0	N	S	63.0	4	63.0	3-1/4	M-S	108	90	920 S
Crim	13465	61.6	29.0	31	68	1	74.5	1.79	14.6	S	65.1	.43	14.0	N-S	S-Q	64.4	4	64.4	4	M-S	110	88	955 S
Justin	13462	60.2	29.0	23	75	2	74.1	1.82	15.1	S	67.9	.40	13.9	N S	S	65.5	5	65.5	4	S	100	90	880 S
Selkirk	13100	60.9	28.1	12	86	2	73.5	1.77	14.1	S-Q	67.0	.40	13.8	N S	S	60.3	4	60.3	3-1/2	M-S	108	95	930 S-Q
1965 Average 2/ 1964 Average 2/		61.1	28.5	23	76	1	74.1	1.79	14.6		66.5	.41	13.9			63.3	4	63.3	3-3/4		107	91	921
		59.3	26.1	16	80	4	73.7	1.77	15.4		66.9	.41	14.7			64.1	4	62.0	3		105	97	959
WISCONSIN																							
Chris	13751	62.9	31.9	59	40	1	75.9	1.73	15.2	S	65.7	.38	14.0	N	S	64.2	3	64.2	2-3/4	M-S	100	80 0	950 S
Crim	13465	62.8	37.3	76	23	1	76.8	1.69	13.6	S	66.0	.40	12.6	N S	S	63.8	5	63.8	4-1/4	S	105 W	90 0	895 S
Justin	13462	62.9	35.2	76	23	1	76.8	1.84	15.0	S	68.3	.36	13.6	N S	S	62.8	5	62.8	3-3/4	S	100	90 I	870 S
Selkirk	13100	61.1	37.7	66	33	1	76.3	1.82	12.4	S	67.6	.42	11.4	N S	S	59.3	3	59.3	3-1/4	W	95	95 S10	790 U
1965 Average 2/ 1964 Average 2/		62.4	35.5	69	30	1	76.5	1.77	14.1		66.9	.39	12.9			62.5	4	62.5	3-1/2		100	89	876
		58.8	32.7	46	52	2	75.2	1.92	14.3		68.4	.40	13.4			63.0	5	61.0	3-3/4		107	95	852
CROP YEAR AVERAGE																							
Crop Average 1965 2/ Crop Average 1964 2/		61.6	32.8	52	47	1	75.6	1.80	13.7		66.6	.40	12.6			61.9	4	62.0	3-1/2		104	91	864
		59.1	29.4	31	66	3	74.5	1.85	14.9		67.7	.41	14.1			63.6	5	61.5	3-1/2		106	96	906
1/ Clean dry - subtract 1#/bu. for dockage free T.W. 2/ 14% moisture basis. 3/ S - Satisfactory, Q - Questionable, U - Unsatisfactory, V - Very. 4/ N - Normal, H - Hard, S - Soft. 5/ Refer to reference mixogram for numerical curve pattern. 6/ B - Bucky, S - Strong, M - Mellow, W - Weak, D - Dead, V - Very. 7/ C - Creamy, G - Gray, D - Dull, Sl - Slightly, V - Very, B - Bright, W - White. 8/ O - Open, I - Irregular, S - Soggy, T - Thick Wall, Sl - Slightly, C - Close. 9/ Averages are obtained using the results for the varieties of Chris, Crim, Justin and Selkirk.																							

1/ Clean dry - subtract 1#/bu. for dockage free T.W.

2/ 14% moisture basis.

3/ S - Satisfactory, Q - Questionable, U - Unsatisfactory, V - Very.

4/ N - Normal, H - Hard, S - Soft.

5/ Refer to reference mixogram for numerical curve pattern.

6/ B - Bucky, S - Strong, M - Mellow, W - Weak, D - Dead, V - Very.

7/ C - Creamy, G - Gray, D - Dull, SI - Slightly, V - Very, B - Bright, W - White.

8/ O - Open, I - Irregular, S - Soggy, T - Thick Wall, SI - Slightly, C - Close.

9/ Averages are obtained using the results for the varieties of Chris, Crim, Justin and Selkirk.

TABLE 7

UNIFORM REGIONAL NURSERY SAMPLES

Crookston, Minnesota

1965 CROP

Variety or Sel. No.	C.I. No.	T.W. 1/ #/Bu.	1000 Kwt.	Kernel Size Kg. Med. Sm.	Pot. Yld.	Wht. Min.	Wht. Pro.	Kern. Char.	Flr. Ext.	Flr. Min. 2/ %	Flr. 65% Ex. Pro.	Mlg. Char.	Mlg. Per.	Mix. Abs.	Mix. Pat.	Bake Abs.	Mix. Time min.	Dough Char.	Crumb Color 1/ %	Crumb Grain 8/ %	Loaf Vol.	Bake Eval.		
Chris	13751	64.0	31.7	53	46	1	75.6	1.62	14.9	S	63.9	.41	14.7	N	VS	65.7	4	63.5	2-1/4	W	120 BW	90	167	Q-U
Crim	13465	62.0	31.4	50	48	2	75.4	1.67	13.2	S	62.9	.47	12.6	N	S	65.7	6	63.5	5-1/4	M	105	90	169	S
Justin	13462	62.0	30.0	41	56	3	74.9	1.76	14.9	S	62.4	.44	14.2	N	S	66.3	5	64.2	4-1/4	M-S	95	95	164	S
Lee	12488	61.0	28.1	14	82	4	73.5	1.68	12.9	Q	60.0	.47	12.6	N	Q	62.8	5	62.8	3-3/4	M-S	105	100	160	S
Manitou	13775	62.0	29.4	39	59	2	74.9	1.68	15.0	S	63.6	.45	14.3	N	S	63.5	3	63.5	2-1/2	M	110 S1C	80	177	Q
Marquis	3641	60.0	23.4	7	87	6	73.1	1.81	12.0	Q	56.6	.56	11.0	N-S	U	58.3	3	58.3	3	W-D	110 C	90	154	U
Pembina	13332	60.5	31.5	31	67	2	74.5	1.74	13.2	S	60.9	.48	12.4	N	Q	61.9	4	61.9	4	M	105 S1C	90	170	Q-S
Selkirk	13100	61.5	31.6	40	58	2	74.9	1.79	13.6	S	61.4	.48	12.1	N	S-Q	61.9	3	61.9	3-1/4	W	100	95	168	Q
Thatcher	10003	59.0	22.6	2	92	6	72.8	1.77	13.4	U	61.0	.53	12.7	N	U	61.0	4	61.0	3	W	105 C	90	168	Q-U
II-54-30	13655	65.0	33.9	54	45	1	75.7	1.60	13.8	S	64.7	.40	12.7	N	VS	62.5	4	62.5	3-1/4	M-S	110 S1C	95	175	Q
II-55-11	13773	64.0	40.7	76	23	1	76.8	1.71	14.6	VS	61.4	.45	13.9	N	S	64.7	6	62.8	3-3/4	M-S	110	90	190	S
II-58-57	13825	62.0	33.6	50	49	1	75.5	1.65	13.9	S	59.0	.47	13.2	N	Q	64.4	5	62.3	3-3/4	M-S	105	95	173	S
II-59-9	13826	62.5	36.1	64	34	2	76.1	1.71	13.0	S	60.7	.47	12.2	N	S	64.2	6	62.3	4-1/4	M-S	100	80	174	S-Q
61-107	13937	62.5	40.5	67	31	2	76.3	1.66	14.0	VS	58.0	.48	13.7	N-S	U	64.4	4	62.3	2-3/4	M	110	90	177	Q-U
B60-82	13823	63.0	32.2	43	55	2	75.1	1.65	13.1	S	59.7	.46	12.6	N	Q	62.3	4	62.3	3-1/2	M	110	80	179	Q
B61-89	13946	62.0	37.2	69	30	1	76.4	1.71	14.2	S	60.6	.48	13.4	N	S-Q	65.7	5	63.5	4-1/2	M	105 S1C	90	170	S
B61-95	13586	64.0	35.6	56	43	1	75.8	1.63	12.9	S	58.3	.46	12.0	N-S	Q	60.3	4	60.3	3	M	105	90	170	Q-U
ND 60-54	13596	62.0	36.8	41	57	2	75.0	1.75	13.3	S	60.2	.46	12.6	N	S	61.9	3	61.9	2-1/4	M	110 C	95	155	U
ND 264	13569	63.0	36.2	68	31	1	76.4	1.68	14.0	S	60.9	.48	12.7	N	S-Q	64.2	4	62.5	2-1/2	M	95	95	174	U
ND 321	13952	61.5	31.0	30	68	2	74.4	1.81	13.6	S	58.9	.46	12.7	N-S	Q-U	62.5	5	62.5	4-1/2	M-S	110 W	95	162	S-Q
ND 363	13828	61.5	32.9	48	49	3	75.3	1.81	14.5	S	62.3	.46	13.7	N	S	64.4	5	62.5	3	M-S	100 S1C	90	173	S-Q
ND 405	13779	62.0	36.2	62	36	2	76.0	1.74	14.2	S	60.9	.43	13.3	N	S	64.2	6	62.4	4	M-S	105	95	170	S-Q
ND 407	13953	64.0	40.2	74	25	1	76.7	1.66	14.0	VS	59.6	.42	12.9	N	Q	63.8	5	63.8	3	M	95	80	180	Q
ND 442	13954	62.5	34.6	58	41	1	75.9	1.78	15.6	S	58.9	.44	15.4	N	Q-U	67.9	6	64.0	3-1/2	M-S	100	90	178	S
ND 455	13955	63.0	31.8	39	58	3	74.8	1.64	11.6	S	61.1	.42	10.6	N	S	59.7	4	59.7	3-1/4	W	105	90	158	U
ND 456	13956	63.5	36.6	60	39	1	76.0	1.69	12.9	S	62.5	.39	12.2	N	VS	61.9	4	61.9	3-3/4	M	110	95	167	Q
ND 457	13957	63.5	33.2	56	40	4	75.6	1.74	13.9	S	63.4	.41	13.0	N	S	64.4	4	62.4	3	M	105 S1C	90	161	Q
SD 624	13947	63.5	36.9	66	32	2	76.2	1.75	13.8	S	61.8	.44	13.4	N	S	63.5	2	63.5	2	W	105 W	90	178	U
SD 625	13948	64.0	34.0	40	58	2	74.9	1.65	14.4	S	62.2	.44	14.2	N	S	66.0	3	63.6	2	W	110 VC	90	158	U
SD 626	13949	64.0	37.6	62	34	4	75.9	1.60	12.9	S	62.0	.42	11.9	N	S	62.3	3	62.3	2-3/4	M	100 S1W	80	171	U-Q

1/ Clean dry - subtract 1#/bu. for dockage free T.W.

2/ 14% moisture basis.

3/ S - Satisfactory, Q - Questionable, U - Unsatisfactory, V - Very.

4/ N - Normal, H - Hard, S - Soft.

5/ Refer to reference mixogram for numerical curve pattern.

6/ B - Bucky, S - Strong, M - Mellow, W - Weak, D - Dead, V - Very.

7/ C - Creamy, G - Gray, D - Dull, S1 - Slightly, V - Very, B - Bright, W - White.

8/ O - Open, I - Irregular, S - Soggy, T - Thick Wall, S1 - Slightly, C - Close.

TABLE 8

UNIFORM REGIONAL NURSERY SAMPLES

Blend of Morris, and St. Paul, Minnesota

1965 CROP

Variety or Sel. No.	C.I. No.	T.W. 1/ #/Bu.	1000 Kwt.	Kernel Size			Pot. Yld.	Whit. Min.		Whit. Pro.	Kern. Char.	Flr. Ext.	Min.@ 65%Ex.		Mlg. Char.	Mlg. Per.	Mix. Abs.	Mix. Pat.	Bake Abs.	Mix. Time	Dough Char.	Crumb Color	Crumb Grain	Loaf Vol.	Bake Eval.																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																				
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1/ Clean dry - subtract 1#/bu. for dockage free T.W.

2/ 14% moisture basis.

3/ S - Satisfactory, Q - Questionable, U - Unsatisfactory, V - Very.

4/ N - Normal, H - Hard, S - Soft.

5/ Refer to reference mixogram for numerical curve pattern.

6/ B - Bucky, S - Strong, M - Mellow, W - Weak, D - Dead, V - Very.

7/ C - Creamy, G - Gray, D - Dull, S1 - Slightly, V - Very, B - Bright, W - White.

8/ O - Open, I - Irregular, S - Soggy, T - Thick Wall, S1 - Slightly, C - Close.

TABLE 9

UNIFORM REGIONAL NURSERY SAMPLES

Bozeman, Montana

1965 CROP

Variety or Seal. No.	C. I. No.	T. W. #/Bu.	1000 Kwt.	Kernel Lg. Med. Sm.	Pot. Yld.	Wht. Min.	Wht. Pro.	Kern. Char.	Flr. Ext.	Min. 65% Ex.	Flr. Pro.	Mlg. Char.	Mix. Abs.	Mix. Pat.	Bake Abs.	Mix. Time	Dough Char.	Crumb Color	Crumb Grain	Loaf Vol.	Bake Eval.			
Chris Crim Justin Lee Manitou	13751	59.0	26.1	8	86	6	73.1	1.68	16.0	S-Q	62.6	.51	15.3	N	S-Q	65.7	4	65.7	3-1/4	W	105 C	90	155	Q
	13465	60.5	33.0	33	63	4	74.5	1.60	14.9	S	61.6	.44	14.4	N	S	65.3	4	65.3	4-3/4	M	105	100	157	S
	13462	60.0	31.3	37	60	3	74.7	1.67	16.0	S	63.0	.40	15.5	N	S	66.0	3	66.0	3-3/4	W	105	95	152	Q
	12488	59.0	29.8	26	70	4	74.1	1.67	15.6	S	59.9	.46	14.9	N	S	64.4	4	64.4	2-3/4	M	100 W	95	171	U-Q
	13775	58.5	25.4	14	81	5	73.5	1.64	16.0	S-Q	62.1	.47	15.1	N	S	63.2	2	63.2	2	M	110 SIC	90	172	U
Marquis Pembina Selkirk Thatcher III-54-30	3641	59.0	26.7	15	81	4	73.6	1.77	16.6	S-Q	59.0	.47	15.7	N	S-Q	64.2	5	64.2	3-3/4	M-S	110 SIC	90	165	S
	13332	59.0	26.8	44	55	1	75.2	1.63	15.3	S	62.7	.44	14.4	N	S	62.8	3	62.8	2-1/2	W	110 SIC	95 W	155	U
	13100	58.0	32.8	7	88	5	73.1	1.54	15.4	S	60.7	.47	14.6	N	S	61.9	4	61.9	4	M-S	110 SIC	90	177	S-Q
	10003	59.0	26.3	18	78	4	73.7	1.62	15.4	S	60.2	.50	14.8	N	Q	62.5	3	62.5	2	W	105	90	169	U
	13655	61.5	28.8	4	89	7	72.9	1.52	14.7	S-Q	62.2	.39	14.2	N	VS	62.5	4	62.5	4	M	115 BC	90	177	S
II-55-11 II-58-57 II-59-9 II-61-107 B60-82	13773	59.5	27.0	9	83	8	73.1	1.72	16.2	S-Q	62.9	.45	14.8	N	S	62.5	7	67.5	5-1/4	M	110 SIC	80	183	S
	13825	57.0	21.0	4	83	13	72.6	1.77	16.2	Q	56.2	.51	14.7	N	S	66.6	5	64.7	4	W	100	80	177	Q
	13826	58.0	33.2	43	51	6	74.9	1.52	15.0	S	60.7	.44	14.4	N	S	65.0	5	63.2	4-1/4	M	100 W	90	168	S
	13937	61.0	38.6	56	43	1	75.8	1.51	14.8	VS	59.3	.48	14.6	N	S-Q	64.2	2	64.2	2	WW	100 W	80 T	171	U
	13823	59.0	26.3	9	87	4	73.2	1.60	16.3	S	59.2	.45	15.1	N	S-Q	65.7	5	63.5	3-1/4	M-S	100	90	175	S-Q
B61-89 B61-95 ND 60-54 ND 264 ND 321	13946	58.5	29.9	33	61	6	74.4	1.73	15.2	S	57.8	.48	14.5	N	S	65.7	5	63.5	4-1/2	M-S	115 SIC	90	180	S
	13586	57.5	29.0	3	88	9	72.7	1.57	16.3	Q	55.5	.44	15.2	N	S	63.2	5	63.2	4	M	100	95	172	S-Q
	13596	59.5	31.2	9	87	4	73.3	1.58	15.0	S	59.2	.46	13.9	N	S-Q	61.9	5	61.9	4	M	110 SIC	90	161	Q
	13569	58.5	28.5	17	76	7	73.5	1.74	16.3	S	59.7	.50	15.3	N	Q	65.7	6	63.5	4-1/2	W	105	90	159	Q
	13952	58.0	30.8	21	72	7	73.7	1.68	15.8	N	58.6	.43	14.8	N	S	65.7	5	63.5	4	W	100	90 T	154	Q-U
ND 363 ND 405 ND 407 ND 442 ND 455	13828	59.0	30.0	19	78	3	73.8	1.70	15.5	S	60.7	.44	14.7	N	S	64.2	5	64.2	4-1/4	M-S	100	90	177	S
	13779	57.0	29.6	20	75	5	73.8	1.62	16.2	S	61.0	.44	15.5	N	S	64.7	6	64.7	6-1/4	M-S	105 C	80	171	S
	13953	56.5	24.3	4	87	9	72.8	1.82	16.5	Q	56.1	.47	15.3	N	S	65.3	9	63.2	6-1/4	M-S	105 SIC	80	184	Q-S
	13954	61.5	32.4	36	61	3	74.7	1.67	16.0	S	59.4	.51	14.6	N	Q	67.0	4	65.3	2-1/2	W	95	90 SIT	154	U
	13955	59.5	25.3	3	90	7	72.8	1.63	16.0	Q	59.0	.42	15.4	N	S	66.3	5	64.2	4-1/4	W	100	90 SIT	159	Q
ND 456 ND 457 SD 624 SD 625 SD 626	13956	59.5	31.3	36	60	4	74.6	1.66	15.4	S	61.2	.39	14.6	N	VS	64.7	4	62.8	3-3/4	M-S	100	80	170	Q
	13957	60.0	26.3	15	81	4	73.6	1.70	15.9	S	62.3	.39	15.4	N	VS	65.7	5	63.5	4-3/4	W	100	90 T	150	Q
	13947	59.5	31.3	25	74	1	74.2	1.56	15.4	S	60.3	.41	14.8	N	S	65.0	3	63.2	1-3/4	W	100	95	158	U
	13948	60.5	28.5	8	89	3	73.3	1.58	15.1	S	61.3	.41	14.4	N	S	64.2	3	62.5	2-1/2	W	110 SIC	90 SIT	156	U
	13949	59.5	30.3	17	79	4	73.7	1.50	14.8	S	60.2	.46	13.7	N	S	63.5	2	63.5	2-1/4	W	105 SIC	90	173	U

1/ Clean dry - subtract 1#/bu. for dockage free T.W.

2/ 14% moisture basis.

3/ S - Satisfactory, Q - Questionable, U - Unsatisfactory, V - Very.

4/ N - Normal, H - Hard, S - Soft.

5/ Refer to reference mixogram for numerical curve pattern.

6/ B - Bucky, S - Strong, M - Mellow, W - Weak, D - Dead, V - Very.

7/ C - Creamy, G - Gray, D - Dull, SI - Slightly, V - Very, B - Bright, W - White.

8/ O - Open, I - Irregular, S - Soggy, T - Thick Wall, SI - Slightly, C - Close.

TABLE 11

UNIFORM REGIONAL NURSERY SAMPLES

Blend of Williston, North Dakota and Sidney, Montana

1965 CROP

Variety or Sel. No.	C.I. No.	T.W. 1/ #/Bu.	1000 Kwt.	Kernel Lg.	Size Med. Sm.	Pot. Yld.	Wht. Min. 2/ %	Wht. Pro. 2/ %	Kern. Char. 3/ %	Flr. Ext.	Min. 2/ %	Flr. 65%Ex. 2/ %	Mlg. Char. 4/ %	Mlg. Per. 3/ %	Mix. Abs. 2/ %	Mix. Pat. 5/ %	Bake Abs. 2/ %	Mix. Time	Dough Char. 6/ %	Crumb Color 7/ %	Crumb Grain g/ %	Loaf Vol.	Bake Eval. 3/ %	
			g.	%	%	%	%	%	%	%	%	%	%	%	%	%	%	%	min.			cc.		
Chris	13751	62.0	24.4	5	92	3	73.1	1.66	15.0	S-Q	62.4	.50	14.8	N	S	62.3	3	62.3	3	M-S	105	95	183	S
Crim	13465	61.5	28.6	26	72	2	74.2	1.65	14.3	S	62.1	.49	13.8	N	S	63.5	5	63.5	6-1/4	M-S	110	90	171	S
Justin	13462	62.0	30.2	20	78	2	73.9	1.77	15.4	S	61.9	.44	14.8	N	S	62.8	4	62.8	3-1/2	M-S	105	95	179	S
Lee	12488	58.0	22.1	2	83	15	72.2	1.70	13.1	Q	58.2	.56	12.5	N	U	58.3	4	58.3	5	M-W	100	80	160	U
Manitou	13775	61.0	25.1	6	91	3	73.2	1.65	15.3	S-Q	63.2	.54	14.9	N	Q	60.3	3	60.3	3	M-S	100	95	184	Q-S
Marquis	3641	54.0	18.3	7	68	25	72.1	1.82	13.6	U	55.6	.59	13.0	N	U	58.1	2	58.1	3-1/4	M	90	80	159	U
Pembina	13332	60.5	25.3	4	92	4	73.0	1.68	14.4	Q-S	59.8	.52	14.0	N	Q	58.7	10	58.7	7	M-S	105	90	172	Q-S
Selkirk	13100	60.0	30.4	14	83	3	73.6	1.76	13.9	S	63.8	.56	13.4	N	Q	59.7	3	59.7	3-3/4	M	105	80	172	Q
Thatcher	10003	60.0	22.1	2	89	9	72.7	1.74	13.3	U	61.1	.57	12.7	N	U	56.7	4	56.7	4-1/4	M	100	80	168	U
III-54-30	13655	64.0	29.2	8	90	2	73.3	1.58	14.0	S	64.3	.41	13.6	N	VS	61.0	4	61.0	4-1/2	M	95	75	167	U-Q
III-55-11	13773	63.0	34.6	36	63	1	74.8	1.66	14.7	S	62.1	.45	14.3	N	S	63.2	4	63.2	4-1/2	M-S	105	95	202	S
III-58-57	13825	62.0	24.0	4	91	5	73.0	1.71	13.7	Q	60.0	.49	13.5	N	S	62.5	4	62.5	4-3/4	M-S	105	95	182	S
III-59-9	13826	60.0	30.9	32	65	3	74.5	1.66	13.9	S	61.9	.48	13.4	N	S	61.9	5	61.9	5-3/4	M-S	105	80	174	S-Q
61-107	13937	61.5	32.4	22	76	2	74.0	1.67	14.4	S	61.0	.49	14.2	N	S	60.7	4	60.7	3-3/4	M-S	100	90	177	Q
B60-82	13823	62.0	27.7	4	92	4	73.0	1.66	14.3	S-Q	60.7	.56	14.1	N	Q-U	61.9	4	61.9	4	M	105	95	198	S
B61-89	13946	60.5	31.9	41	57	2	75.0	2.13	14.7	S	61.0	.56	14.5	N	Q-U	65.0	4	64.0	3-1/2	M-S	105	95	176	S
B61-95	13586	61.5	28.6	5	92	3	73.1	1.68	14.1	S-Q	59.6	.42	13.9	N	Q-S	61.9	5	61.9	4-1/2	M	105	90	197	S
ND 60-54	13596	62.0	33.8	21	77	2	74.0	1.68	14.1	S	62.9	.43	13.5	N	VS	61.6	3	61.6	3-1/2	M-W	100	95	172	Q
ND 264	13569	60.5	27.5	10	86	4	73.3	1.75	14.6	S-Q	59.6	.47	13.5	N	Q	62.3	5	62.3	4-3/4	M	105	100	177	S
ND 321	13952	61.0	27.4	12	85	3	73.5	1.74	14.1	S	60.5	.47	13.2	N	S-Q	62.5	5	62.5	4-1/2	M	105	100	180	S
ND 363	13828	61.0	29.0	26	72	2	74.2	1.85	14.8	S	63.3	.49	14.3	N	S	62.5	4	62.5	3-3/4	M	100	100	177	S
ND 405	13779	60.5	30.3	21	78	1	74.0	1.71	15.3	S	63.8	.46	14.9	N	S	62.8	4	62.8	5	M-S	105	95	194	S
ND 407	13953	62.0	31.2	31	67	2	74.5	1.74	14.8	S	60.0	.44	14.6	N	S	63.8	4	63.8	3-1/2	M	100	95	180	S
ND 442	13954	62.5	32.3	30	69	1	74.5	1.80	16.1	S	62.1	.45	15.6	N	S	64.7	4	64.7	2-3/4	M	100	95	182	S-Q
ND 455	13955	60.0	24.8	6	87	7	73.0	1.70	13.0	Q	63.2	.40	12.8	N	VS	61.0	4	61.0	4-1/4	M	105	100	166	Q
ND 456	13956	61.5	28.8	8	89	3	73.3	1.69	13.6	S	61.2	.49	12.4	N	S-Q	60.3	4	60.3	4-1/4	M	100	95	161	Q
ND 457	13957	62.0	28.8	27	71	2	74.3	1.80	14.2	S	64.0	.50	14.1	N	S	63.2	4	63.2	3-1/4	M-S	100	95	173	S
SD 624	13947	61.5	30.0	13	85	2	73.6	1.70	14.4	S	63.2	.48	14.0	N	S	62.3	2	62.3	2-1/2	M	100	90	172	Q
SD 625	13948	62.5	30.1	6	92	2	73.2	1.68	14.9	S	62.9	.46	14.8	N	S	62.5	2	62.5	2	M	105	95	175	U-Q
SD 626	13949	61.5	29.8	14	83	3	73.6	1.67	14.4	S	62.1	.44	13.7	N	S	61.3	3	61.3	2-1/2	M-S	100	100	167	Q-U

1/ Clean dry - subtract 1#/bu. for dockage free T.W.

2/ 14% moisture basis.

3/ S - Satisfactory, Q - Questionable, U - Unsatisfactory, V - Very.

4/ N - Normal, H - Hard, S - Soft.

5/ Refer to reference mixogram for numerical curve pattern.

6/ B - Bucky, S - Strong, M - Mellow, W - Weak, D - Dead, V - Very.

7/ C - Creamy, G - Gray, D - Dull, SI - Slightly, V - Very, B - Bright, W - White.

8/ O - Open, I - Irregular, S - Soggy, T - Thick Wall, SI - Slightly, C - Close.

TABLE 12

UNIFORM REGIONAL NURSERY SAMPLES

Casselton, North Dakota

1965 CROP

Variety or Sel. No.	C.I. No.	T.W. #/bu.	1000 Kwt.	Kernel Lg.	Med. Sm.	Pot. Yld.	Wht. Min.	Wht. Pro.	Kern. Char.	Flr. Ext.	Min. @ 65% Ex.	Flr. Pro.	Mlg. Char.	Mlg. Per.	Mix. Abs.	Mix. Pat.	Bake Abs.	Mix. Time	Dough Char.	Crumb Color	Crumb Grain	Loaf Vol.	Bake Eval.
				%	%	%	%	%	%	%	%	%	%	%	%	%	%	%	%	%	%	%	%
Chris	13751	62.0	27.0	20	78	2	73.9	1.79	13.4	S-Q	61.1	.47	12.5	N	S	3	60.3	4-3/4	M	105	95	164	S-Q
Crim	13465	61.0	31.0	56	43	1	75.8	1.82	12.7	S	60.1	.45	12.1	N	S	7	63.5	4-3/4	M	110	S1C	95	168
Justin	13462	60.5	29.7	33	66	1	74.6	1.82	14.8	S	60.2	.46	14.0	N	S	7	63.2	6	M-S	100	80	168	S
Lee	12488	60.5	28.5	17	82	1	73.8	1.75	13.1	S-Q	58.5	.47	12.4	N	Q	8	61.6	6	M	110	S1C	95	168
Manitou	13775	61.0	26.2	13	85	2	73.6	1.75	13.7	Q	58.2	.53	12.6	N	U	4	60.0	3-1/2	M	110	S1C	90	166
Marquis	3641	58.0	23.6	3	86	11	72.6	1.88	11.9	U	58.0	.49	10.9	N	Q-U	3	58.1	3	W	110	C	90	S1T
Pembina	13332	59.0	27.4	12	85	3	73.5	1.82	13.0	S-Q	56.8	.50	12.1	N	U	10	57.5	7-1/2	M-S	105	S1C	90	177
Selkirk	13100	59.5	31.7	39	60	1	74.9	1.83	13.4	S	61.5	.46	12.6	N	S	4	61.0	3-1/2	M	105	S1C	90	S1T
Thatcher	10003	60.0	24.4	3	94	3	73.0	1.77	12.8	Q	59.6	.53	11.8	N	U	5	59.3	3-3/4	M	100	90	164	Q
II-54-30	13655	64.0	31.1	21	78	1	74.0	1.78	11.8	S	62.3	.43	11.0	N	S	6	59.3	3-3/4	M	110	BC	95	162
II-55-11	13773	63.5	36.0	60	39	1	76.0	1.79	13.2	VS	60.1	.46	12.7	N	S	7	60.7	5	M-S	110	95	179	S-Q
II-58-57	13825	60.5	25.1	16	81	3	73.7	1.78	12.3	Q*	56.0	.51	11.8	N-S	U	6	61.9	4-1/2	W	100	90	172	Q
II-59-9	13826	61.0	34.5	66	33	1	76.3	1.72	12.5	VS	58.9	.47	11.4	N	Q	7	61.0	5	W	100	90	170	Q
61-107	13937	62.0	37.0	60	39	1	76.0	1.71	13.1	VS*	56.7	.48	12.3	N	Q	5	60.7	3-1/4	W	110	90	173	Q
B60-82	13823	62.0	29.8	15	82	3	73.6	1.80	12.1	Q	57.7	.50	11.4	N	U	6	59.3	4-1/4	W	105	90	173	U
B61-89	13946	60.5	34.5	67	32	1	76.3	1.85	13.3	VS	55.3	.55	12.5	N	U*	4	62.5	3-1/2	M	105	S1C	90	177
B61-95	13586	62.5	31.2	23	76	1	74.1	1.85	12.0	S*	56.3	.46	11.3	N-S	U*	7	58.1	5	M	105	90	175	U
60-54	13596	61.0	34.8	27	72	1	74.3	1.77	13.0	S	58.0	.50	12.5	N	U*	5	61.6	3-1/4	W	110	C	85	S10
ND 264	13569	61.5	31.1	36	63	1	74.8	1.82	13.2	S	59.4	.48	12.3	N	Q*	6	62.5	3-3/4	W	105	S1C	90	T
ND 321	13952	60.5	31.2	29	68	3	74.3	1.85	13.1	S	55.8	.47	12.3	N-S	U*	6	61.9	4-1/2	W	100	S1C	95	169
ND 363	13828	61.0	31.6	39	60	1	74.9	1.85	13.5	S	59.3	.48	12.7	N	Q	7	61.9	5-1/4	W	105	80	I	167
ND 405	13779	60.0	36.8	67	32	1	76.3	1.77	13.2	VS	57.0	.48	11.1	N	Q*	9	59.7	5-1/2	W	90	80	172	U
ND 407	13953	62.0	36.5	58	41	1	75.9	1.81	12.9	S	56.5	.46	12.3	N	Q*	6	61.6	5-3/4	M	105	S1C	80	I
ND 442	13954	61.0	34.0	55	44	1	75.7	1.93	14.8	S	57.0	.48	14.6	N	U*	7	64.4	4-1/4	M-S	100	80	I	183
ND 455	13955	62.0	33.8	67	32	1	76.3	1.73	13.2	VS	57.0	.48	12.1	N	U*	7	61.3	5	M	95	80	I	173
ND 456	13956	62.0	35.7	55	44	1	75.7	1.76	13.5	S*	60.2	.41	12.8	N	S	8	61.9	5-1/4	M	105	S1C	80	I
ND 457	13957	62.0	31.5	56	43	1	75.8	1.84	13.4	S	60.6	.44	12.4	N	S*	5	61.9	4-1/4	M	105	80	171	S
SD 624	13947	61.0	34.6	63	36	1	76.1	1.83	12.5	VS	59.1	.48	11.8	N	S-Q	3	60.7	2-3/4	M	110	90	168	U
SD 625	13948	62.0	33.2	29	70	1	74.4	1.71	13.0	S	58.9	.50	12.7	N	Q-U	4	62.5	3-1/4	W	105	C	90	147
SD 626	13949	61.0	33.3	53	45	2	75.6	1.76	12.7	S	60.6	.49	12.2	N	S	4	61.0	3-1/4	M	100	90	169	S-Q

1/ Clean dry - subtract 1#/bu. for dockage free T.W.

2/ 14% moisture basis.

3/ S - Satisfactory, Q - Questionable, U - Unsatisfactory, V - Very.

4/ N - Normal, H - Hard, S - Soft.

5/ Refer to reference mixogram for numerical curve pattern.

6/ B - Bucky, S - Strong, M - Mellow, W - Weak, D - Dead, V - Very.

7/ C - Creamy, G - Gray, D - Dull, S1 - Slightly, V - Very, B - Bright, W - White.

8/ O - Open, I - Irregular, S - Seggy, T - Thick Wall, S1 - Slightly, C - Close.

* Immature kernels.

TABLE 13

UNIFORM REGIONAL NURSERY SAMPLES

Dickinson, North Dakota

Variety or Sel. No.	C.I. No.	T.W. 1/ #/bu.	1000 Kwt.	Kernel Size			Pot. Yld.	Wht. Min.	Wht. Pro.	Kern. Char.	Flr. Ext.	Min. @ 65% Ex.	Flr. 2/ %	Mlg. Char.	Mlg. Per.	Mix. Abs.	Mix. Pat.	Bake Abs.	Bake Time	Dough Char.	Crumb Color	Crumb Grain	Loaf Vol.	Bake Eval.
				g.	%	%		2/ %		3/ %		2/ %	2/ %	4/ %	3/ %	2/ %	5/ %	2/ %	min.	6/ %	1/ %	g/	cc.	3/ %
Chris	13751	61.0	27.7	12	87	1	73.6	1.59	15.9	S	63.4	.45	15.0	N	S	63.8	3	63.8	2-3/4	M	105 SIC	90	171	Q
Crim	13465	61.0	30.4	35	64	1	74.7	1.61	15.2	S	62.3	.45	14.9	N	S	65.0	5	61.3	4-1/2	M	105	90	183	S
Justin	13462	60.0	31.2	29	70	1	74.4	1.69	16.1	S	62.1	.43	15.9	N	S	65.7	5	61.6	3-1/2	M	100	70	184	S-Q
Lee	12488	57.5	25.0	4	90	6	72.9	1.65	14.0	U	59.7	.46	13.8	N	Q-U	61.9	5	61.9	4-3/4	M	95 SIC	95	175	S
Manitou	13775	61.0	26.3	10	89	1	73.5	1.64	15.9	Q	62.1	.46	15.5	S	S	62.3	3	62.3	2-3/4	M-S	105	70	175	Q
Marquis	3641	58.5	29.7	21	77	2	74.0	1.66	15.0	S	61.8	.47	14.7	N	S-Q	62.5	4	62.5	3-1/2	W	105	90	161	Q
Pembina	13332	59.0	26.0	5	93	2	73.2	1.63	14.9	Q	59.7	.46	14.8	N	Q-U	61.3	9	61.3	6-3/4	S	100	90	180	S
Selkirk	13100	57.5	31.2	18	81	1	73.9	1.63	14.4	S	62.6	.45	14.6	N	S	63.2	4	63.2	4	W	100	90	155	Q-U
Thatcher	10003	58.5	22.5	2	93	5	72.9	1.60	14.2	U	61.4	.44	13.8	N	Q	60.7	4	60.7	4	M-S	100 C	90	174	Q
II-54-30	13655	62.5	31.5	16	83	1	73.8	1.54	14.8	S	61.8	.39	14.5	N	VS	61.0	3	61.0	3-1/2	M-S	100 BC	80	174	Q
II-55-11	13773	63.0	36.8	62	37	1	76.1	1.56	15.1	VS	59.7	.45	14.5	N	Q	64.2	4	62.5	3-1/4	M-S	105	80	178	S
II-58-57	13825	59.5	24.3	6	91	3	73.2	1.63	15.1	S-Q	57.0	.52	15.0	N	U	64.7	4	62.8	3-3/4	M	105	90	184	S
II-59-9	13826	59.5	34.2	53	46	1	75.6	1.53	15.1	VS	59.7	.47	14.0	N	Q	64.2	5	62.5	5	M	105	85	199	S
61-107	13937	61.0	35.5	48	51	1	75.4	1.50	15.1	S	57.3	.47	14.5	N	U-Q	62.8	3	62.8	3-1/4	M	105 SIC	85	178	S
B60-82	13823	61.5	29.2	10	88	2	73.4	1.50	15.1	S-Q	59.5	.46	14.7	N	Q	63.2	3	63.2	3-1/2	M	100	90	189	S
B61-89	13946	60.5	35.8	62	37	1	76.1	1.62	15.5	VS	58.9	.48	14.8	N	Q-U	64.4	4	62.3	3-1/2	M	110 SIC	80	192	S
B61-95	13586	61.0	29.6	16	82	2	73.7	1.55	15.2	S	58.3	.45	15.1	N	Q-U	63.2	4	63.2	3-3/4	M	100	90	201	S
ND 60-54	13596	61.5	34.6	37	62	1	74.8	1.59	14.9	S	60.2	.50	14.8	N	U	61.6	3	61.6	3-1/2	M	105 SIC	95	172	S
ND 264	13569	57.5	28.3	20	78	2	73.9	1.71	15.8	S	58.3	.54	14.6	N	U	63.2	6	63.2	4-3/4	M	105	90	170	S
ND 321	13952	58.0	30.2	29	69	2	74.4	1.67	15.0	S	57.3	.51	14.8	N	U	62.5	4	62.5	4-1/4	M	105 SIC	80	177	S
ND 363	13828	60.0	33.1	58	41	1	75.9	1.68	15.3	S	59.2	.55	14.5	N	U	62.5	4	62.5	3-1/2	M	105 SIC	80	184	S
ND 405	13779	58.5	34.1	46	53	1	75.3	1.68	15.6	S	59.8	.48	14.8	N	Q	62.5	3	62.5	4	VW	100 SIC	75	182	U
ND 407	13953	60.5	33.8	54	45	1	75.7	1.65	15.4	S	55.8	.53	15.1	N-S	U	63.2	4	63.2	3-3/4	W	105	90	182	Q
ND 442	13954	60.5	35.0	51	48	1	75.5	1.71	16.1	S	57.6	.57	15.0	N-S	U	64.2	4	62.5	2-3/4	M	105	80	182	Q
ND 455	13955	60.0	29.8	23	75	2	74.1	1.63	13.9	S	58.0	.46	13.3	N	Q-U	60.7	3	60.7	3-3/4	W	105	90	182	Q-U
ND 456	13956	60.0	33.4	34	65	1	74.7	1.62	14.7	S	59.2	.40	13.2	N	Q	60.7	4	60.7	4	M	110 SIC	90	180	Q
ND 457	13957	61.0	31.5	49	50	1	75.4	1.69	15.3	S	60.7	.45	14.0	N	S-Q	62.3	4	62.3	3-1/2	M	105	75	173	Q-S
SD 624	13947	60.5	31.2	30	69	1	74.5	1.68	15.5	S	60.4	.49	14.8	N	Q-U	63.8	2	60.0	2	VW	105 SIC	95	164	U
SD 625	13948	62.0	33.0	19	80	1	73.9	1.67	15.2	S	61.7	.48	15.0	N	Q	62.3	2	62.3	1-3/4	W	110 C	95	168	Q-U
SD 626	13949	61.0	33.4	35	64	1	74.7	1.67	15.0	S	59.9	.48	14.9	N	Q-U	61.0	2	61.0	2	W	105 SIC	85	175	U

1/ Clean dry - subtract 1#/bu. for dockage free T.W.

2/ 14% moisture basis.

3/ S - Satisfactory, Q - Questionable, U - Unsatisfactory, V - Very.

4/ N - Normal, H - Hard, S - Soft.

5/ Refer to reference mixogram for numerical curve pattern.

6/ B - Bucky, S - Strong, M - Mellow, W - Weak, D - Dead, V - Very.

7/ C - Creamy, G - Gray, D - Dull, Sl - Slightly, V - Very, B - Bright, W - White.

8/ O - Open, I - Irregular, S - Soggy, T - Thick Wall, Sl - Slightly, C - Close.

1965 CROP

TABLE 14

UNIFORM REGIONAL NURSERY SAMPLES

Fargo, North Dakota

1965 CROP

Variety or Sel. No.	C.I. No.	T.W. #/Bu.	1000 Kwt.	Kernel Lg.	Med.	Size Sm.	Pot. Yld.	Wht. Min.	Wht. Pro.	Kern. Char.	Flr. Ext.	Min.@ 65%Ex.	Flr. Pro.	Mlg. Char.	Mlg. Per.	Mix. Abs.	Mix. Pat.	8ake Abs.	Mix. Time	Dough Char.	Crumb Color	Crumb Grain	Loaf Vol.	Bake Eval.
				%	%	%	%	%	%	%	%	%	%	%	%	%	%	%	min.	%	%	g/	cc.	
Chris	13751	61.5	28.1	24	75	1	74.2	1.62	15.5	S	60.8	.42	14.3	N	S	61.0	3	61.0	2-1/2	M	105	90	175	Q
Crim	13465	61.0	29.7	39	59	2	74.9	1.78	13.7	S	59.8	.50	13.3	N	Q-U	56.7	6	56.7	5-1/4	M-S	110 W	90	162	Q
Justin	13462	61.0	29.8	35	64	1	74.7	1.86	15.3	S	61.2	.41	13.2	N	S	61.9	6	61.9	5	M-S	105 SIC	90	185	S
Lee	12488	60.0	28.8	19	77	4	73.8	1.92	13.2	S-Q	58.4	.50	13.1	N	Q-U	60.3	6	60.3	5-3/4	M	105 SIC	90	167	S
Manitou	13775	60.5	26.7	20	79	1	74.0	1.73	15.6	S-Q	62.2	.44	13.0	N	S	59.0	5	59.0	3-1/2	M	110 SIC	70	182	Q
Marquis	3641	57.0	21.2	4	78	18	72.3	1.96	13.2	U	55.8	.52	13.0	N	U	58.7	3	58.7	3	W	110 C	80	173	U
Pembina	13332	60.5	27.4	17	80	3	73.7	1.92	13.8	Q	59.6	.57	12.8	N	U	57.5	10	57.5	6-1/4	M-S	105	95	172	Q
Selkirk	13100	58.0	28.6	17	80	3	73.7	2.07	14.3	S	61.1	.53	13.2	N	U	61.0	3	61.0	3	W	110 C	90	166	Q
Thatcher	10003	59.5	21.5	2	89	9	72.7	1.86	14.5	Q	61.2	.52	14.2	N	U	59.0	4	59.0	3-1/4	M	110 C	80	178	Q
II-54-30	13655	63.5	31.4	27	71	2	74.3	1.61	14.2	S	62.5	.37	13.0	N	VS	59.3	5	59.3	3-1/2	M-S	105 SIC	80	171	Q-S
II-55-11	13773	63.5	34.5	46	53	1	75.3	1.75	14.2	S	61.5	.42	13.3	N	S	61.9	3	61.9	3	M-S	110	90	180	S
II-58-57	13825	60.5	23.3	5	88	7	72.9	1.72	14.2	U	57.2	.45	12.7	N-S	U	62.8	7	62.8	5-1/2	M	100	90	185	S
II-59-9	13826	60.0	33.4	52	47	1	75.6	1.63	14.9	S	60.6	.41	14.0	N	VS	62.5	7	62.5	5	M-S	90	80	190	S-Q
61-107	13937	63.0	38.5	66	33	1	76.3	1.54	14.2	VS	59.6	.42	13.9	N	S-Q	62.3	4	62.3	3-1/4	M	110 SIC	90	184	S
B60-82	13823	61.5	28.3	8	88	4	73.2	1.62	14.1	S	59.1	.47	13.9	N	Q-S	61.6	5	61.6	4	M	105	95	193	S
B61-89	13946	61.0	32.5	49	50	1	75.4	1.74	14.0	S	59.1	.48	13.6	N	Q	63.5	5	63.5	4-1/2	M	110 C	95	183	S
B61-95	13586	62.5	31.3	25	73	2	74.2	1.60	13.7	S	58.9	.43	13.5	N	Q	60.3	5	60.3	4-1/4	M	110	90	189	S
ND 60-54	13596	63.0	38.2	55	44	1	75.7	1.66	14.0	VS	61.1	.46	13.6	N	S	61.0	3	61.0	2-1/2	M	110 C	95	164	Q
ND 264	13569	59.5	26.4	8	87	5	73.2	1.90	14.2	S	59.1	.47	13.6	N	Q-S	62.5	4	62.5	3-3/4	W	100	95	158	U
ND 321	13952	59.5	29.0	13	84	3	73.5	1.77	14.6	S	58.4	.42	13.4	N	Q	61.9	6	61.9	5	M-S	105 C	95	176	S
ND 363	13828	62.0	33.2	53	46	1	75.6	1.79	14.8	VS	60.4	.42	13.7	N	S	61.9	5	61.9	4	M-S	95	80	178	S
ND 405	13779	61.5	36.4	59	41	0	76.0	1.70	15.4	VS	60.9	.38	14.1	N	VS	65.7	8	63.5	5-1/2	M-S	105	95	175	S
ND 407	13953	63.0	32.5	32	67	1	74.6	1.59	14.3	S	58.7	.41	13.9	N	VS	62.5	7	62.5	5	M	100 W	80	175	S
ND 442	13954	61.5	31.3	23	76	1	74.1	1.81	15.1	S	59.4	.43	13.9	N	Q-S	66.3	7	62.5	4-1/2	M-S	105	95	180	S
ND 455	13955	62.0	30.6	37	62	1	74.8	1.73	14.7	S	60.6	.40	14.5	N	S	64.2	6	62.5	4-1/4	M	105 SIC	95	172	S
ND 456	13956	62.5	32.8	34	65	1	74.7	1.71	14.6	S	62.0	.36	13.9	N	VS	62.5	6	62.5	4	M	105 SIC	95	160	S-Q
ND 457	13957	62.0	28.6	26	72	2	74.2	1.77	14.9	S	62.0	.39	14.2	N	VS	63.2	5	63.2	3	M	110 SIC	80	188	S
SD 624	13947	62.0	34.2	48	51	1	75.4	1.71	15.0	VS	60.6	.42	13.9	N	VS	62.5	2	62.5	2	W	110 BC	95	154	U-Q
SD 625	13948	62.5	32.6	30	69	1	74.5	1.73	14.4	S	60.3	.40	14.1	N	VS	64.2	3	62.5	3-1/2	M	100	90	180	S
SD 626	13949	61.5	33.2	47	52	1	75.3	1.73	14.1	VS	59.8	.50	12.9	N	Q	60.7	4	60.7	2-3/4	W	110 SIC	90	161	Q-U

1/ Clean dry - subtract 1#/bu. for dockage free T.W.

2/ 14% moisture basis.

3/ S - Satisfactory, Q - Questionable, U - Unsatisfactory, V - Very.

4/ N - Normal, H - Hard, S - Soft.

5/ Refer to reference mixogram for numerical curve pattern.

6/ B - Bucky, S - Strong, M - Mellow, W - Weak, D - Dead, V - Very.

7/ C - Creamy, G - Gray, D - Dull, S1 - Slightly, V - Very, B - Bright, W - White.

8/ O - Open, I - Irregular, S - Soggy, T - Thick Wall, S1 - Slightly, C - Close.

TABLE 15

UNIFORM REGIONAL NURSERY SAMPLES

Minot, North Dakota

1965 CRGP

Variety or Sel. No.	C.I. No.	T.W. #/Bu.	1000 Kwt.	Kernel Lg.	Med.	Size Sm.	Pot. Yld.	Wht. Min.	Wht. Pro.	Wht. %	Kern. Char.	Flr. Ext.	Flr. 55Ex.	Min. 2/	Flr. 2/	Mlg. Char.	Mlg. Per.	Mix. Abs.	Mix. Pat.	Bake Abs.	Mix. Time	Dough Char.	Grumb Color	Grumb Grain	Leaf Vol.	Bake Eval.
Chris	13751	62.5	27.3	20	78	2	73.9	1.79	15.3	15.0	S-Q	62.5	62.3	.45	15.0	N	S	66.0	4	63.5	3-1/4	M-S	105	70 OI	173	Q
Crim	13465	62.5	32.1	50	48	2	75.4	1.76	13.3	12.6	S	62.3	62.3	.45	12.6	N	S	64.2	6	62.5	4-3/4	M	110 W	95	166	S
Justin	13462	61.5	29.9	30	67	3	74.6	1.89	13.2	14.6	S	62.6	62.6	.45	14.6	N	S	64.7	5	64.7	3-3/4	M-S	105	80	164	S
Lee	12488	61.0	26.6	11	85	4	73.4	1.69	12.9	12.7	Q	61.1	61.1	.50	12.7	N	Q	61.0	4	61.0	3-1/4	M	110 S1C	100	163	Q
Manitou	13775	62.5	28.1	23	76	1	74.1	1.84	15.3	14.8	S-Q	64.4	64.4	.50	14.8	N	Q	63.2	3	63.2	2-1/2	M-S	95	90 I	184	Q-U
Marquis	3641	60.5	23.7	5	85	10	72.8	1.82	12.2	11.7	Q-U	60.4	60.4	.48	11.7	N	Q	58.7	2	58.7	2	W	110 C	80 T	146	U
Pembina	13332	61.5	27.3	12	84	4	73.4	1.82	13.0	12.4	S-Q	59.6	59.6	.50	12.4	N	U	58.1	10	58.1	5-1/4	M-S	110	80 O	171	Q-U
Selkirk	13100	60.5	30.3	25	71	4	74.1	1.86	13.7	12.5	S	64.3	64.3	.45	12.5	N	S	61.9	3	61.9	3	W	105	90	155	Q
Thatcher	10003	60.5	21.7	2	90	8	72.7	1.79	13.2	12.8	Q-U	62.8	62.8	.51	12.8	N	Q-U	60.3	4	60.3	3-1/2	M	105 S1C	80 O	168	Q
II-54-30	13655	64.5	31.2	25	73	2	74.2	1.63	14.0	13.6	S	65.7	65.7	.43	13.6	N	S	62.5	3	62.5	2-3/4	M-S	110 S1C	80 IO	172	U
II-55-11	13773	64.5	37.3	59	39	2	75.9	1.69	14.5	14.3	VS	62.8	62.8	.47	14.3	N	S	64.7	5	62.8	3-1/4	M-S	110 W	80	191	S
II-58-57	13825	60.5	21.0	3	87	10	72.7	1.72	14.4	13.8	Q-U	58.9	58.9	.47	13.8	N	U-Q	64.4	5	62.5	3-1/2	M	105	70 O	187	Q
II-59-9	13826	61.5	33.2	47	50	3	75.2	1.57	14.2	13.7	S	63.0	63.0	.45	13.7	N	S	63.8	6	63.8	4-1/4	M	110 BW	80 O	180	S
61-107	13937	62.0	37.0	47	50	3	75.2	1.56	15.2	15.0	S	60.6	60.6	.45	15.0	N	S	63.2	3	63.2	2-3/4	M	110 W	90	183	Q
B60-82	13823	63.0	29.7	15	82	3	73.6	1.62	13.8	13.6	S	61.4	61.4	.45	13.6	N	S	62.5	4	62.5	3	M-S	105	90	186	S-Q
B61-89	13946	61.5	32.5	53	45	2	75.6	1.69	14.6	14.1	S	62.3	62.3	.50	14.1	N	S-Q	63.8	3	63.8	3	M-S	105	95	181	S-Q
B61-95	13586	64.0	33.0	35	64	1	74.7	1.64	14.6	14.0	S	59.1	59.1	.43	14.0	N	Q	63.2	4	63.2	3-1/4	M-S	110	90	188	S
ND 60-54	13596	62.5	34.0	42	55	3	75.0	1.65	14.7	14.5	S	63.8	63.8	.42	14.5	N	S	62.5	3	62.5	2-3/4	M	110 C	90	167	U
ND 254	13569	61.0	29.1	15	81	4	73.6	1.63	15.0	14.0	S	62.0	62.0	.45	14.0	N	S	64.4	5	64.4	3-3/4	W-M	105	100	180	Q
ND 321	13952	61.5	29.7	18	79	3	73.8	1.64	14.5	13.7	S	63.3	63.3	.43	13.7	N	S	63.5	5	63.5	4	M	110	80 O	178	S
ND 363	13828	62.0	32.9	54	45	1	75.7	1.73	16.4	15.6	S	64.4	64.4	.43	15.6	N	S	67.0	5	65.0	3-1/2	M	110	70 OI	190	Q
ND 405	13779	61.0	34.7	47	51	2	75.3	1.62	15.8	15.6	S	64.3	64.3	.44	15.6	N	S	66.0	4	63.8	3-1/4	W	105	90	186	Q-U
ND 407	13953	63.5	35.3	62	37	1	76.1	1.59	15.7	14.9	VS	61.2	61.2	.38	14.9	N	VS	65.7	4	63.5	3	M	110	90	192	S
ND 442	13994	62.0	31.3	34	65	1	74.7	1.82	17.3	17.2	S	61.8	61.8	.44	17.2	N	S	70.3	7	66.3	4	S-M	100	70 O	179	Q
ND 455	13955	61.5	28.4	32	65	3	74.5	1.63	15.3	14.8	S	62.2	62.2	.44	14.8	N	S	66.0	5	63.8	3-3/4	M-S	105	80 O	185	S
ND 456	13956	62.0	30.3	30	67	3	74.4	1.66	14.6	13.9	S	64.6	64.6	.35	13.9	N	VS	63.8	4	63.8	4	M-S	105	90	177	S
ND 457	13957	63.5	31.3	46	51	3	75.2	1.71	14.7	14.2	S	64.9	64.9	.41	14.2	N	S	62.5	3	62.5	3	M-S	115	90	168	S-Q
SD 624	13947	62.5	33.7	44	53	3	73.4	1.71	15.2	14.9	S	62.7	62.7	.46	14.9	N	S	65.0	3	63.2	2	M	120 BW	90 O	185	Q
SD 625	13948	62.5	32.3	27	71	2	74.3	1.64	15.7	15.5	S	64.9	64.9	.44	15.5	N	S	66.6	3	64.7	2	W	105 S1C	95	164	Q-U
SD 626	13949	62.5	34.1	45	52	3	75.1	1.67	15.0	14.4	S	64.6	64.6	.42	14.4	N	S	64.2	3	62.5	2	W	110	90	181	Q-U

1/ Clean dry - subtract 1#/bu. for dockage free T.W.

2/ 14% moisture basis.

3/ S - Satisfactory, Q - Questionable, U - Unsatisfactory, V - Very.

4/ N - Normal, H - Hard, S - Soft.

5/ Refer to reference mixogram for numerical curve pattern.

6/ B - Bucky, S - Strong, M - Mellow, W - Weak, D - Dead, V - Very.

7/ C - Creamy, G - Gray, D - Dull, S1 - Slightly, V - Very, B - Bright, W - White.

8/ O - Open, I - Irregular, S - Soggy, T - Thick Wall, S1 - Slightly, C - Close.

TABLE 16

UNIFORM REGIONAL NURSERY SAMPLES

Hightmore, South Dakota

1965 CROP

Variety or Sel. No.	C.I. No.	T.W. 1/ #/Bu.	1000 Kwt.	Kernel Size			Pot. Yld.	Wht. Min. 2/ %	Wht. Pro. 2/ %	Kern. Char. 3/ %	Flr. Ext. %	Flr. 65%Ex. 2/ %	Min.@ 2/ %	Flr. 2/ %	Mlg. Char. 4/ %	Mlg. Per. 3/ %	Mix. Abs. 2/ %	Mix. Pat. 2/ %	Bake Abs. 2/ %	Mix. Time	Dough Char. 6/ %	Crumb Color 7/ %	Crumb Grain 8/ %	Loaf Vol.	Bake Eval. 3/ %			
				Leg.	Med.	Sm.																						
			g.	%	%	%																						
Chris	13751	61.5	25.8	17	80	3	73.7	1.85	16.2	S	61.7	.55	15.8	N	S		64.4	3	62.4	2-3/4	M	110	80	0	190	Q-S		
	13465	60.5	26.0	10	87	3	73.4	2.01	15.3	S	61.2	.57	14.6	N	S		65.7	5	63.6	4-1/4	M	100	90	90	193	S		
	13462	60.5	29.0	14	82	4	73.5	1.96	15.9	S	60.8	.52	15.2	N	S		64.7	5	64.7	3-3/4	M	105	90	197	S			
	12488	59.5	25.7	8	86	6	73.1	1.99	15.6	S	59.2	.58	14.9	N	Q-S		64.7	5	64.7	4-1/4	M-S	105	90	200	S			
	13775	59.5	23.5	7	89	4	73.2	1.89	16.5	S	61.1	.55	15.9	N	S		62.5	3	62.5	2-3/4	M	105	SIC	90	0	181	Q	
Marquis	3641	54.0	18.7	1	82	17	72.2	2.15	14.1	U	56.5	.62	13.2	N-S	U		60.3	2	60.3	3	M	110	C	90	168	Q-U		
	13332	57.5	24.0	4	89	7	72.9	1.96	16.0	S-Q	59.7	.60	15.6	N	Q		67.3	7	65.3	5-1/4	S	105	SIC	90	0	195	S	
	13100	54.5	24.3	3	87	10	72.7	2.09	16.4	Q	60.4	.60	16.2	N	S-Q		67.0	4	65.3	3	M	100	SIC	90	0	190	S-Q	
	10003	59.0	20.4	2	83	15	72.4	2.03	15.2	Q-S	60.0	.58	14.5	N	S		64.2	4	64.2	3-1/4	M	110	C	80	0	188	S	
	13655	62.5	29.2	5	89	6	73.0	1.87	15.4	S	62.2	.48	14.4	N	VS		62.3	4	62.3	3-3/4	M	100	SIC	80	0	177	Q-U	
III-55-11	13773	62.0	35.1	42	55	3	75.0	1.85	15.4	VS	61.0	.48	14.5	N	S		62.8	4	62.8	3-3/4	M	105	SIC	95	180	S		
	13825	58.0	24.6	15	78	7	73.4	1.88	15.8	S	57.3	.56	14.7	N-S	Q		64.4	5	64.4	3-3/4	M-S	95	90	197	S			
	13826	60.0	32.3	35	62	3	74.6	1.87	15.5	S	59.7	.57	15.0	N	S		64.7	4	64.7	3-3/4	M	100	SIC	90	197	S		
	13937	61.5	33.9	29	69	2	74.4	1.88	16.3	S	58.9	.59	16.0	N	S-Q		64.2	3	64.2	2-1/2	M	105	W	90	194	Q		
	13823	60.0	26.2	7	86	7	73.0	1.98	15.4	S	59.0	.55	14.9	N	S		63.2	3	63.2	3-1/4	M-S	100	90	I	189	S		
B61-89	13946	58.0	30.6	40	56	4	74.8	2.06	15.6	S	57.8	.59	14.7	N	Q		65.3	5	65.3	5	M-S	100	SIC	80	0	189	S	
	13586	61.5	27.4	10	83	7	73.2	1.88	15.1	S	57.2	.53	14.0	N	Q		61.0	5	61.0	5-3/4	M-S	100	W	90	I	183	Q	
	13596	62.0	31.7	20	77	3	73.9	1.89	15.9	S	60.3	.55	15.4	N	S		63.5	3	63.5	3	M-S	100	SIC	90	181	S-Q		
	ND 60-54	13569	60.5	29.7	32	65	3	74.5	1.98	16.5	S	59.0	.56	15.0	N	S		64.7	4	65.7	4-3/4	M-S	100	SIC	90	0	181	S
	ND 264	13952	57.0	26.5	10	83	7	73.2	2.12	16.6	S	58.0	.55	15.7	N	S		65.7	6	65.7	4-3/4	M-S	100	SIC	90	0	181	S
ND 321	13828	60.5	31.3	37	60	3	74.7	1.99	15.6	S	60.1	.50	14.6	N	S		64.4	4	64.4	3-1/4	M-S	105	SIC	70	0	189	Q	
	13779	59.0	33.8	30	67	3	74.5	2.11	17.2	S	60.4	.49	16.2	N	S		65.3	4	65.3	3-3/4	M	105	70	0	202	Q		
	ND 405	13953	60.0	31.7	32	65	3	74.5	2.03	16.5	S	57.3	.50	15.8	N	S		66.3	6	64.4	4-3/4	M-S	105	80	0	204	S	
	ND 407	13954	60.5	31.9	30	68	2	74.4	2.07	17.0	S	59.2	.56	16.2	N	S		67.0	4	65.3	3	M	95	90	192	S-Q		
	ND 442	13955	60.0	27.0	14	83	3	73.6	2.02	15.8	S	59.7	.51	14.3	N	S		64.2	4	64.2	4-1/2	M	95	80	186	S-Q		
ND 455	13956	61.0	29.7	17	80	3	73.7	2.07	16.0	S	60.8	.49	14.7	N	VS		64.2	4	64.2	3-3/4	M	95	80	196	S-Q			
	ND 456	60.5	28.6	30	67	3	74.4	2.03	15.9	S	62.2	.46	14.9	N	VS		63.5	4	63.5	3-3/4	M-S	100	80	184	S-Q			
	ND 457	13957	60.0	31.4	23	74	3	74.0	2.03	16.9	S	59.9	.57	16.3	N	S		64.2	2	64.2	1-3/4	VW	95	80	173	U		
	SD 624	13947	60.0	31.0	15	83	2	73.7	1.83	16.1	S	60.5	.48	15.4	N	VS		64.2	2	64.2	2	VW	105	SIC	90	176	U	
	SD 625	13948	60.5	30.2	13	84	3	73.5	1.93	16.2	S	58.5	.45	14.8	N	S		62.8	2	62.8	2	VW	100	SIC	95	171	U	
SD 626	13949	60.5	30.2	13	84	3	73.5	1.93	16.2	S	58.5	.45	14.8	N	S		62.8	2	62.8	2	VW	100	SIC	95	171	U		

1/ Clean dry - subtract 1#/bu. for dockage free T.W.

2/ 14% moisture basis.

3/ S - Satisfactory, Q - Questionable, U - Unsatisfactory, V - Very.

4/ N - Normal, H - Hard, S - Soft.

5/ Refer to reference mixogram for numerical curve pattern.

6/ B - Bucky, S - Strong, M - Mellow, W - Weak, D - Dead, V - Very.

7/ C - Creamy, G - Gray, D - Dull, SI - Slightly, V - Very, B - Bright, W - White.

8/ O - Open, I - Irregular, S - Soggy, T - Thick Wall, SI - Slightly, C - Close.

TABLE 17

UNIFORM REGIONAL NURSERY SAMPLES

Watertown, South Dakota

1965 CROP

Variety or Sel. No.	C.I. No.	T.W. #/Bu.	1000 Kwt.	Kernel Size Lg. Med. Sm.	Pot. Yld.	Wht. Min.	Wht. Pro.	Kern. Char.	Flr. Ext.	Min. @ 65% Ex.	Flr. Pro.	Mix. Char.	Mlg. Per.	Mix. Abs.	Mix. Pat.	Bake Abs.	Mix. Time	Dough Char.	Crumb Color	Crumb Grain	Leaf Vol.	Bake Eval.
				%	%	%	%	%	%	%	%	%	%	%	%	%	min.	g/	l/	g/	cc.	
Chris	13751	61.5	25.6	14	84	2	73.6	1.63	1.59	S	62.3	.49	15.7	N	S	63.8	4	M-S	110 S1C	90	183	Q-S
Crim	13465	57.0	23.0	5	89	6	73.0	1.79	15.6	S	60.0	.53	14.6	N	S-Q	65.7	8	M	100	95	174	S
Justin	13462	58.0	25.3	10	86	4	73.0	1.89	17.1	S	61.4	.46	16.1	N	S	65.7	7	M-S	100	90	182	S
Lee	12488	50.0	17.2	0	67	33	71.4	1.90	14.7	U	55.2	.52	13.7	N-S	U	61.0	6	M	100 S1C	90	187	Q-S
Manitou	13775	59.0	24.3	7	90	3	73.2	1.75	16.2	S	62.6	.48	15.0	N	S	64.2	4	M-S	105 S1C	80	179	Q-S
Marquis	3641	50.5	15.1	1	55	43	70.2	2.05	14.7	U	52.9	.56	12.9	N-S	U	63.2	4	M-S	105 C	95	180	Q-S
Pembina	13332	56.5	20.4	3	87	10	72.7	1.76	15.1	Q	59.5	.48	14.1	N	S-Q	63.2	10	M-S	100 S1C	80	191	S-Q
Selkirk	13100	54.0	22.7	3	87	10	72.7	1.86	15.8	Q	61.4	.47	15.0	N	S	62.8	6	M-S	100 S1C	90	178	S-Q
Thatcher	10003	54.5	18.1	2	78	20	72.1	1.92	15.1	U	59.8	.50	14.1	N	S-Q	62.5	5	M-S	105 C	95	186	S-Q
II-54-30	13655	63.0	27.9	4	91	5	73.0	1.71	15.5	S	63.8	.38	14.5	N	VS	62.4	5	M-S	110 S1C	90	196	S-Q
II-55-11	13773	62.5	35.2	48	49	3	75.3	1.71	15.1	VS	63.5	.41	14.8	N	VS	65.7	5	M-S	105	100	190	S-Q
II-58-57	13825	56.0	21.0	8	79	13	72.8	1.86	16.6	Q	59.8	.41	16.1	N	S	66.6	7	M-S	95	80	200	Q-S
II-59-9	13826	57.0	27.4	13	82	5	73.4	1.74	16.2	S	64.0	.50	15.3	N	S	65.7	7	M-S	95	95	198	S
61-107	13937	60.0	30.7	13	83	4	73.5	1.89	15.9	VS	63.3	.48	15.2	N	S	63.8	5	M-S	100 W	95	190	S
B60-82	13823	60.0	25.5	12	81	7	73.3	1.75	15.8	S	62.6	.48	15.1	N	S	62.4	5	M-S	95	80	192	Q
B61-89	13946	56.5	26.3	17	77	6	73.6	1.99	16.5	S	61.4	.51	15.7	N	S	64.0	6	M-S	105	90	188	S
B61-95	13586	62.0	26.7	7	87	6	73.1	1.66	15.6	S	61.1	.43	14.9	N	S	63.6	4-1/2	M-S	95	80	188	S
ND 60-54	13596	61.0	32.3	16	78	6	73.5	1.64	15.4	VS	63.5	.43	14.9	N	VS	64.7	4	M	105 S1C	90	181	Q
ND 264	13569	57.0	23.3	6	84	10	72.8	1.88	15.0	S	61.6	.49	14.8	N	S	64.0	5-1/2	M	100	90	183	S
ND 321	13952	55.0	22.2	3	84	13	72.5	2.01	16.7	Q	59.3	.50	15.7	N	S-Q	64.0	5-1/4	M-S	100 S1C	90	183	S
ND 363	13828	59.0	27.9	18	79	3	73.8	1.85	16.4	S	62.9	.46	15.6	N	S	66.3	6	M-S	95	90	188	S-Q
ND 405	13779	58.0	28.5	8	88	4	73.2	1.72	16.3	S	63.1	.41	15.7	N	VS	64.4	4-3/4	M-S	100	80	195	S
ND 407	13953	60.0	30.3	24	73	3	74.1	1.72	15.8	S	60.2	.43	14.4	N-S	S	67.0	6	M-S	100	90	210	S
ND 442	13954	58.0	25.5	7	88	5	73.1	1.87	16.8	S	61.7	.46	15.9	N	S	67.9	6	M-S	95	90	182	S
ND 455	13955	57.5	22.2	3	87	10	72.7	1.72	14.9	S	61.3	.44	14.3	N	S	66.0	6	M	95	90	186	S-Q
ND 456	13956	59.5	27.0	7	88	5	73.1	1.88	16.4	S	63.3	.47	15.7	N	S	64.0	3-1/2	M	105 S1C	80	185	S-Q
ND 457	13957	60.5	26.8	20	77	3	73.9	1.83	16.1	S	65.4	.47	15.4	N	VS	67.0	5	M	95	90	167	S-Q
SD 624	13947	58.0	25.5	7	90	3	73.2	1.77	15.7	S	64.1	.46	14.6	N	S	63.6	3-1/2	M	100	90	181	S-Q
SD 625	13948	62.5	29.6	11	86	3	73.4	1.77	15.0	S	64.2	.50	14.2	N	S	64.4	3	M	110 S1C	80	168	Q-S
SD 626	13949	60.5	29.2	9	88	3	73.3	1.65	15.3	S	64.9	.51	14.2	N	S	63.2	3-3/4	M	105 S1C	80	180	Q-S

1/ Clean dry - subtract 1#/bu. for dockage free T.W.

2/ 14% moisture basis.

3/ S - Satisfactory, Q - Questionable, U - Unsatisfactory, V - Very.

4/ N - Normal, H - Hard, S - Soft.

5/ Refer to reference mixogram for numerical curve pattern.

6/ B - Bucky, S - Strong, M - Mellow, W - Weak, D - Dead, V - Very.

7/ C - Creamy, G - Gray, D - Dull, SI - Slightly, V - Very, B - Bright, W - White.

8/ O - Open, I - Irregular, S - Soggy, T - Thick Wall, SI - Slightly, C - Close.

TABLE 18

UNIFORM REGIONAL NURSERY SAMPLES

Madison, Wisconsin

1965 CROP

Variety or Sel. No.	C.I. No.	T.W. #/Bu.	1000 Kwt.	Kernel Size			Pot. Yld.	Whit. Min.	Whit. Pro.	Kern. Char.	Flr. Ext.	Min. @ 65% Ex.	Mlg. Char.	Mlg. Per.	Mix. Abs.	Mix. Pat.	Bake Abs.	Bake Time	Dough Char.	Crumb Color	Crumb Grain	Loaf Vol.	Bake Eval.																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																						
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1/ Clean dry - subtract 1#/bu. for dockage free T.W.

2/ 14% moisture basis.

3/ S - Satisfactory, Q - Questionable, U - Unsatisfactory, V - Very.

4/ N - Normal, H - Hard, S - Soft.

5/ Refer to reference mixogram for numerical curve pattern.

6/ B - Bucky, S - Strong, M - Mellow, W - Weak, D - Dead, V - Very.

7/ C - Creamy, G - Gray, D - Dull, S1 - Slightly, V - Very, B - Bright, W - White.

8/ O - Open, I - Irregular, S - Soggy, T - Thick Wall, S1 - Slightly, C - Close.

TABLE 19

UNIFORM REGIONAL NURSERY SAMPLES

Laramie, Wyoming

1965 CROP

Variety or Sel. No.	C.I. No.	T.W. #/bu.	1000 Kwt.	Kernel Size		Pot. Yld.	Wht. Min.	Wht. Pro.	Kern. Char.	Flr. Ext.	Flr. Min.	Ex. 65%	Mlg. Char.	Mlg. Per.	Mix. Abs.	Mix. Pat.	Bake Abs.	Mix. Time	Dough Char.	Crumb Color	Crumb Grain	Loaf Vol.	Bake Eval.
				g.	%	%	%	%	%	%	%	%	%	%	%	%	%	min.	g/	l/	g/	cc.	3/
Chris	13751	62.0	29.4	41	58	1	75.0	1.57	11.1	56.5	.55	10.4			62.5	2	62.5	1-3/4	D	90	DC	70	ST 139
Crim	13465	60.5	33.8	66	33	1	76.3	1.64	10.6	55.8	.55	9.7			62.3	2	62.3	2	S1D	90	DC	70	ST 146
Justin	13462	60.5	32.9	68	31	1	76.4	1.64	11.3	56.0	.51	10.7			63.2	2	63.2	2-1/4	S1D	90	DC	70	ST 144
Lee	12488	61.0	32.5	57	42	1	75.8	1.67	10.2	55.8	.55	9.8			61.0	2	61.0	1-3/4	D	90		70	ST 144
Manitou	13775	61.5	27.9	40	59	1	75.0	1.57	10.7	58.1	.54	9.9			60.3	2	60.3	1-3/4	D	90		70	ST 140
Marquis	3641	61.0	30.6	49	50	1	75.4	1.63	9.5	54.9	.57	8.7			58.1	1	58.1	1-3/4	D	80		65	ST 133
Pembina	13332	62.0	30.6	37	62	1	74.8	1.58	10.7	56.7	.52	10.0			60.3	3	60.3	2-1/2	S1D	90		70	ST 150
Selkirk	13100	60.5	36.8	64	34	2	76.1	1.67	9.8	59.6	.48	9.1			59.0	1	59.0	1-1/2	D	85		60	ST 141
Thatcher	10003	61.5	29.6	48	51	1	75.4	1.55	10.0	55.1	.56	9.1			59.0	1	59.0	1-1/2	D	90		65	ST 137
II-54-30	13655	63.0	31.7	37	62	1	74.8	1.55	9.8	56.7	.54	8.9			58.7	1	58.7	1-1/4	D	85	DC	40	ST 142
II-55-11	13773	62.0	36.0	53	44	3	75.5	1.59	11.5	56.3	.55	11.1			62.5	2	62.5	1-3/4	D	80	S1C	60	ST 160
II-58-57	13825	59.0	27.3	47	52	1	75.3	1.54	9.7	50.7	.60	8.8			61.9	3	61.9	2-1/2	D	80		70	ST 143
II-59-9	13826	58.5	37.0	73	26	1	76.6	1.56	10.6	50.9	.59	9.3			61.9	2	61.9	2	D	80		60	ST 149
61-107	13937	61.0	37.5	68	31	1	76.4	1.53	9.9	51.6	.59	9.5			60.7	1	60.7	1-1/4	D	90	S1C	30	ST 143
B60-82	13823	60.5	32.8	50	48	2	75.4	1.54	9.8	52.1	.59	8.9			61.0	1	61.0	1-1/4	D	80		50	ST 143
B61-89	13946	60.5	36.5	72	27	1	76.6	1.62	10.1	51.2	.60	9.0			61.6	2	61.6	1-1/4	S1D	90	DS1C	65	ST 149
B61-95	13586	61.0	32.3	51	48	1	75.5	1.54	10.2	50.5	.61	9.0			61.3	1	61.3	1-1/2	D	80		50	ST 136
ND 60-54	13596	61.5	38.9	71	27	2	76.5	1.58	10.0	57.0	.53	9.2			61.0	2	61.0	1-1/2	S1D	90		70	ST 146
ND 264	13569	62.0	34.0	57	42	1	75.8	1.51	9.7	51.9	.57	8.4			60.7	2	60.7	1-1/2	D	80		70	ST 125
ND 321	13952	60.5	33.1	55	44	1	75.7	1.64	10.2	50.2	.56	9.2			61.0	2	61.0	2-1/4	D	80		70	ST 140
ND 363	13828	62.0	31.2	51	48	1	75.5	1.71	11.3	57.2	.50	10.6			62.5	2	62.5	1-1/2	VW	90		70	ST 145
ND 405	13779	58.5	36.6	65	34	1	76.2	1.58	10.7	53.0	.56	10.0			62.8	2	62.8	1-3/4	D	70	DC	50	ST 156
ND 407	13953	59.5	32.2	60	39	1	76.0	1.58	10.0	51.4	.58	9.1			61.3	4	61.3	3-1/2	D	80	DC	60	ST 140
ND 442	13954	61.0	34.4	66	33	1	76.3	1.67	12.2	55.8	.52	11.9			66.3	3	66.3	2	VW	90		70	ST 157
ND 455	13955	61.0	32.3	49	50	1	75.4	1.49	9.6	55.1	.50	8.6			60.7	2	60.7	1-1/2	D	80		60	ST 133
ND 456	13956	62.0	34.8	65	34	1	76.2	1.58	10.3	57.9	.47	9.4			61.9	2	61.9	1-1/2	S1D	90		70	ST 143
ND 457	13957	62.0	31.4	62	36	2	76.0	1.59	10.2	56.0	.55	9.1			61.6	2	61.6	1-1/4	D	90		60	ST 133
SD 624	13947	61.5	34.4	53	46	1	75.6	1.62	10.3	57.4	.52	9.7			59.3	1	59.3	1-1/4	D	80		50	ST 138
SD 625	13948	63.5	32.4	39	60	1	74.9	1.60	10.8	59.0	.50	10.3			61.9	2	61.9	1-1/4	VW	95	C	60	ST 149
SD 626	13949	62.5	29.8	38	61	1	74.9	1.64	10.7	57.6	.52	10.0			61.9	3	61.9	2-3/4	VW	95		70	ST 152

1/ Clean dry - subtract 1#/bu. for dockage free T.W.

2/ 14% moisture basis.

3/ S - Satisfactory, Q - Questionable, U - Unsatisfactory, V - Very.

4/ N - Normal, H - Hard, S - Soft.

5/ Refer to reference mixogram for numerical curve pattern.

6/ B - Bucky, S - Strong, M - Mellow, W - Weak, D - Dead, V - Very.

7/ C - Creamy, G - Gray, D - Dull, S1 - Slightly, V - Very, B - Bright, W - White.

8/ O - Open, I - Irregular, S - Soggy, T - Thick Wall, S1 - Slightly, C - Close.

TABLE 20

UNIFORM REGIONAL NURSERY SAMPLES

Sheridan, Wyoming

1965 CROP

Variety or Sel. No.	C.I. No.	I.W. #/Bu.	1000 Kwt.	Kernel Size			Pot. Yld.	Wht. Min.	Wht. Pro.	Kern. Char.	Flr. Ext.	Flr. Min.	5% Ex.	Mlg. Char.	Mlg. Per.	Mix.		Dough Char.	Crumb Color	Crumb Grain	Loaf Vol.	Bake Eval.
				g.	%	%		2/ %	2/ %	3/ %	%	2/ %	2/ %	2/ %	2/ %	2/ %	2/ %					
Chris	13751	61.0	26.5	4	94	2	73.1	1.36	16.3	S	63.7	.47	15.9	N	U	65.3	3	M	110	90	182	S
Crim	13465	60.0	27.7	18	80	2	73.8	1.29	16.1	S	60.9	.40	14.8	N	S	66.0	4	M	100	90	178	S
Justin	13462	60.5	28.4	12	86	2	73.5	1.40	16.4	S	62.3	.38	16.1	N	S	66.3	4	M	105	85	179	S
Lee	12488	60.0	28.8	13	86	1	73.6	1.34	16.2	S	58.8	.42	14.8	N-S	U	62.3	2	M	110	90	183	U
Manitou	13775	60.0	29.8	3	94	3	73.0	1.29	15.6	S	62.6	.42	14.5	N	S	62.5	2	M-S	105	80	180	Q-U
Marquis	3641	61.5	26.0	7	91	2	73.3	1.37	15.6	S	59.7	.39	14.4	N	S-Q	63.2	2	M-S	100	80	186	S
Pembina	13332	60.0	27.7	9	90	1	73.4	1.21	15.6	S	61.9	.36	14.8	N	S	63.2	4	M-S	110	90	190	S
Selkirk	13100	60.0	29.3	9	89	2	73.4	1.31	15.5	S	65.1	.34	14.8	N	VS	63.2	2	M	105	90	172	S
Thatcher	10003	60.0	24.5	3	94	3	73.0	1.31	15.6	Q-S	60.5	.37	15.3	N	S	61.9	2	W	100	80	176	U
II-54-30	13655	62.5	29.1	3	96	1	73.1	1.22	15.9	S	62.4	.33	15.1	N	VS	62.5	2	M-S	110	80	187	S-Q
II-55-11	13773	61.0	33.1	23	74	3	74.0	1.41	16.4	S	61.9	.39	15.8	N	S	64.2	3	M-S	110	80	201	S
II-58-57	13825	61.5	25.3	5	94	1	73.2	1.33	16.2	S	55.1	.38	14.8	N-S	U	62.8	2	VW	95	90	182	U
II-59-9	13826	59.5	33.0	38	61	1	74.9	1.29	16.3	S	61.1	.37	15.3	N	S	65.3	4	M-S	95	85	210	S
61-107	13937	60.0	33.6	31	68	1	74.5	1.17	16.4	S	59.3	.33	14.9	N-S	S-Q	64.2	3	W	110	80	192	S-Q
B60-82	13823	61.5	28.6	6	93	1	73.3	1.25	15.8	S	59.8	.36	14.9	N	Q	62.5	2	VW	95	80	192	U
B61-89	13946	62.0	30.3	31	68	1	74.5	1.34	16.1	S	57.7	.38	14.8	N	U-Q	65.7	3	M	110	85	185	S
B61-95	13886	62.0	22.6	4	95	1	73.2	1.25	16.2	S-Q	58.2	.37	15.3	N	U-Q	62.5	2	M	105	80	200	Q-S
ND 60-54	13596	60.5	36.0	28	70	2	74.3	1.30	15.1	S	62.3	.35	14.3	N	VS	62.8	3	M-S	105	90	187	Q
ND 264	13569	61.0	30.3	9	88	3	73.3	1.37	16.9	S	58.5	.38	15.0	N	U-Q	63.2	3	VW	105	90	185	U
ND 321	13952	61.0	29.4	9	90	1	73.4	1.31	16.2	S	54.6	.36	14.3	S	U	63.2	2	M	105	80	185	U
ND 363	13828	60.5	30.3	18	81	1	73.9	1.30	16.0	S	60.6	.34	14.8	N	VS	64.2	3	M	105	75	194	Q
ND 405	13779	59.0	32.2	17	82	1	73.8	1.39	17.0	S	59.7	.34	15.8	N	Q	65.3	3	M	100	80	204	S
ND 407	13953	61.5	29.3	7	92	1	73.3	1.39	17.4	S	56.3	.36	16.1	N-S	U	63.2	2	W	100	90	183	Q
ND 442	13954	61.0	29.6	9	90	1	73.4	1.42	17.4	S	58.9	.34	16.2	N-S	Q	66.0	3	M-S	105	80	184	S
ND 455	13955	61.5	28.7	5	94	1	73.2	1.29	16.6	S	56.9	.35	14.8	N	Q-U	62.8	2	M	95	80	184	U
ND 456	13956	61.5	30.7	9	90	1	73.4	1.46	16.5	S	60.5	.30	15.0	N	VS	64.2	3	M-S	105	80	190	S
ND 457	13957	60.5	27.0	5	93	2	73.2	1.45	16.7	S	60.6	.33	15.6	N	VS	65.0	3	M-S	100	80	175	S
SD 624	13947	59.0	29.8	9	90	1	73.4	1.29	16.0	S	61.4	.36	15.1	N	S	64.7	2	W	100	85	190	U
SD 625	13948	61.0	28.9	2	97	1	73.1	1.51	16.3	S	63.6	.34	15.4	N	VS	65.0	3	W	105	80	169	U
SD 626	13949	60.0	30.9	11	87	2	73.5	1.43	16.6	S	60.2	.38	14.4	N-S	Q	64.7	2	M	110	80	179	Q

1/ Clean dry - subtract 1#/bu. for dockage free T.W.

2/ 14% moisture basis.

3/ S - Satisfactory, Q - Questionable, U - Unsatisfactory, V - Very.

4/ N - Normal, H - Hard, S - Soft.

5/ Refer to reference mixogram for numerical curve pattern.

6/ B - Bucky, S - Strong, M - Mellow, W - Weak, D - Dead, V - Very.

7/ C - Creamy, G - Gray, D - Dull, S1 - Slightly, V - Very, B - Bright, W - White.

8/ O - Open, I - Irregular, S - Soggy, T - Thick Wall, S1 - Slightly, C - Close.

TABLE 21

UNIFORM REGIONAL NURSERY SAMPLE AVERAGES

1965 CROP

Variety or Sel. No.	C.I. No.	T.W. #/Bu.	1000 Kwt.	Kernel Lg.	Size Med.	Pot. Yld.	Wht. Min.	Wht. Pro.	Kern. Char.	Flr. Ext.	Min.@ 65%Ex.	Flr. Pro.	Mlg. Char.	Mlg. Per.	Mix. Abs.	Mix. Pat.	Bake Abs.	Mix. Time	Dough Char.	Crumb Color	Crumb Grain	Loaf Vol.	Bake Eval.	Gen. Eval.	
				%	%	%	%	%	%	%	%	%	%	%	%	%	%	min.			cc.				
Chris	13751	61.5	30.2	22	75	3	74.0	1.68	15.4	S	.47	14.9	N	S	63.8	3	63.4	2-1/2	M-S	100 SIC	95 SII	915	Q	S-Q	
Crim	13465	60.6	29.9	34	63	3	74.6	1.71	14.5	S	.48	13.9	N	S	64.5	6	63.8	5-1/4	M-S	100 W	95 SIO	915	S	S	
Justin	13462	60.4	29.8	29	68	3	74.3	1.79	15.8	S	.44	15.1	N	S	64.8	5	64.1	4-1/2	M-S	105 SIC	95	900	S	S	
Lee	12488	58.8	27.4	17	76	7	73.5	1.75	14.2	Q	.50	13.7	N	Q	62.0	5	62.1	4-3/4	M-S	100 W	85	0	955	S-Q	
Manitou	13775	60.4	27.1	17	80	3	73.7	1.71	15.6	S-Q	.49	14.7	N	Q	62.1	3	62.2	3-1/4	M	110 SIC	85	I	910	Q-S	
Marquis	3641	57.2	22.8	8	79	13	72.8	1.85	13.8	U	.53	13.1	N-S	U	60.4	3	60.4	3-3/4	M	115 SIC	90	905	Q-U	U	
Pembina	13332	59.3	26.9	17	79	4	73.7	1.74	14.5	S-Q	.49	13.9	N	S	61.4	7	61.3	5-1/2	M-S	100	95	945	Q	S-Q	
Selkirk	13100	58.3	29.6	20	76	4	73.8	1.80	14.7	S	.62	14.1	N	S	62.9	4	62.6	3-1/2	M	100 SIC	95	900	Q-S	S-Q	
Thatcher	10003	59.0	23.1	7	85	8	73.0	1.76	14.4	Q-U	.51	13.8	N	Q-U	61.2	4	61.1	3-3/4	M	105 C	100	925	Q	Q-U	
II-54-30	13655	63.1	30.6	20	77	3	73.9	1.63	14.5	S	.41	13.7	N	VS	61.9	4	61.9	3-1/4	M	110 C	90	0	1010	Q	U-Q
II-55-11	13773	62.6	35.8	48	50	2	75.3	1.71	15.1	VS	.45	14.4	N	S	63.7	5	63.2	4	M	105	95	970	S	S	
II-58-57	13825	59.8	24.7	14	79	7	73.4	1.72	14.9	S-Q	.49	14.2	N-S	Q-U	64.2	5	64.2	4	M	100	95 SII	995	S	Q-U	
II-59-9	13826	59.8	33.5	46	51	3	75.2	1.65	14.7	S	.60	14.0	N	S	63.8	5	63.9	5	M-S	100 W	90	0	990	S	S-Q
61-107	13937	61.2	36.1	45	53	2	75.2	1.63	15.0	VS	.48	14.6	N-S	Q	63.1	3	63.3	3-3/4	M	100	90	0	955	S	S-Q
B60-82	13823	61.1	28.9	17	79	4	73.7	1.67	14.6	S	.49	14.1	N	Q	62.7	4	62.7	4	M	105	90	I	980	Q-S	Q
B61-89	13946	60.0	33.2	50	48	2	75.4	1.80	15.0	S	.51	14.3	N-S	Q-U	65.0	4	65.0	4	M-S	110 SIC	90	1035	S	Q-U	
B61-95	13586	61.7	30.0	23	74	3	74.0	1.66	14.6	S	.45	13.9	N-S	Q	61.9	4	61.9	4-1/2	M	110 W	90	0	1005	S-Q	Q-U
ND 60-54	13596	61.5	35.6	35	63	2	74.7	1.67	14.6	S	.46	14.0	N	S	62.5	3	62.5	3-1/2	M-S	105 SIC	85	980	Q-S	Q-S	
ND 264	13569	60.0	29.6	25	71	4	74.1	1.77	15.2	S	.49	14.1	N	Q	64.3	5	64.3	4-1/4	M-W	100	95	890	Q	Q-U	
ND 321	13952	59.4	29.8	22	73	5	73.9	1.79	15.1	S	.47	14.1	N-S	Q	64.0	5	64.0	4-1/2	M	95 SIC	90	0	940	S	S-Q
ND 363	13828	60.7	32.0	41	57	2	75.0	1.78	15.2	S	.46	14.4	N	S	64.0	5	64.0	4	M-S	100	90	1020	S	S-Q	
ND 405	13779	59.5	33.8	39	59	2	74.9	1.73	15.6	S	.44	14.8	N	S	64.3	5	64.3	4-1/2	M	105	90	I	1015	S	Q
ND 407	13953	61.2	33.1	40	58	2	74.9	1.72	15.2	S	.45	14.5	N-S	Q	64.8	6	64.8	4-3/4	M-S	100	95	I	1015	S	Q
ND 442	13954	60.9	32.1	36	62	2	74.8	1.81	16.1	S	.48	15.5	N	S	66.6	5	66.6	3-3/4	M	100	85	0	985	S-Q	Q-S
ND 455	13955	60.8	28.8	26	70	4	74.1	1.70	14.5	S	.44	13.7	N	S	63.1	4	63.1	4-1/4	M	100 W	80	IO	980	Q	Q-S
ND 456	13956	61.2	32.4	34	64	2	74.6	1.74	14.9	S	.41	13.9	N	S	63.2	4	63.2	3-3/4	W	105	90	0	985	Q-U	Q-U
ND 457	13957	61.3	29.8	35	62	3	74.6	1.77	15.2	S	.43	14.4	N	S	63.8	4	63.8	4	W	105 SIC	90	900	S	S	
SD 624	13947	60.5	32.1	34	64	2	74.6	1.73	15.1	S	.47	14.4	N	S	63.5	2	63.5	3-1/2	VW	95	95	890	U	U	
SD 625	13948	62.1	31.7	22	76	2	74.0	1.70	15.1	S	.45	14.7	N	S	64.4	3	64.4	2-3/4	W	105 C	95	920	U	U	
SD 626	13949	61.0	32.5	33	64	3	74.5	1.68	14.8	S	.47	13.8	N	S	62.9	3	62.9	3	WV	100 SIC	85	IO	940	U	U

1/ Clean dry - subtract 1#/bu. for dockage free T.W.

2/ 14% moisture basis.

3/ S - Satisfactory, Q - Questionable, U - Unsatisfactory, V - Very.

4/ N - Normal, H - Hard, S - Soft.

5/ Refer to reference mixogram for numerical curve pattern.

6/ B - Bucky, S - Strong, M - Mellow, W - Weak, D - Dead, V - Very.

7/ C - Creamy, G - Gray, D - Dull, SI - Slightly, V - Very, B - Bright, W - White.

8/ O - Open, I - Irregular, S - Soggy, T - Thick Wall, SI - Slightly, C - Close.

TABLE 22

UNIFORM NURSERY STATE AVERAGES

1965 CROP

Variety or Sel. No.	C.I. No.	T.W. 1/ #/Bu.	1000 Kwt.	G.	Kernel Lg.	Size Md.	Sm.	Pot. Yld.	Whit. Min.	Whit. Pro.	Flr. Ext.	Min. 65%Ex.	Flr. Pro.	Mix. Abs.	Mix. Pat.	Bake Abs.	Mix. Time.	Dough Char.	Crumb Color	Crumb Grain	Loaf Vol.
				%	%	%	%	%	%	%	%	%	%	%	%	%	min.	4/ min.			cc.
<u>MINNESOTA STATIONS</u>																					
Chris	13751	62.8	31.4	51	47	2	75.5	1.68	15.2	63.3	.42	15.2	15.2	65.0	4	63.4	2-1/2	M	113	90	178
Crim	13465	60.3	30.4	42	55	3	75.0	1.73	13.7	62.6	.48	13.1	13.1	65.0	6	63.4	5-3/4	M	108	85	175
Justin	13462	60.5	29.7	39	57	4	74.8	1.83	15.4	62.5	.45	15.0	15.0	65.3	5	63.7	4-1/2	M-S	98	93	169
Selkirk	13100	59.0	29.9	30	65	5	74.3	1.86	14.3	61.8	.48	13.4	13.4	61.9	4	61.9	3-1/2	M-W	103	95	171
<u>MONTANA STATIONS</u>																					
Chris	13751	60.2	25.6	7	88	5	73.1	1.68	15.5	62.5	.49	15.2	15.2	63.7	4	63.7	3	M	105	92	170
Crim	13465	60.3	30.1	26	71	3	74.2	1.65	14.9	62.0	.46	14.5	14.5	65.4	6	64.1	5-1/2	M	105	90	166
Justin	13462	60.2	30.2	24	72	4	74.0	1.74	16.0	62.3	.43	15.4	15.4	65.2	5	64.0	3-3/4	M	102	93	166
Selkirk	13100	58.5	30.5	10	86	4	73.3	1.68	14.8	62.5	.49	14.2	14.2	62.0	4	61.5	3-3/4	M	107	87	172
<u>NORTH DAKOTA STATIONS</u>																					
Chris	13751	61.8	27.5	19	80	1	73.9	1.70	15.0	62.0	.45	14.2	14.2	62.8	3	62.2	3-1/4	M	105	86	171
Crim	13465	61.4	30.8	45	54	1	75.2	1.74	13.7	61.1	.46	13.2	13.2	62.4	6	61.0	4-3/4	M	109	93	170
Justin	13462	60.8	30.2	32	67	1	74.5	1.82	15.4	62.4	.44	14.4	14.4	63.9	6	62.9	4-1/2	M-S	103	80	175
Selkirk	13100	58.9	30.5	25	73	2	74.2	1.85	14.0	61.8	.47	13.2	13.2	61.8	4	61.8	3-1/2	W	105	90	160
<u>SOUTH DAKOTA STATIONS</u>																					
Chris	13751	61.5	25.7	16	82	2	73.7	1.74	16.1	62.0	.52	15.8	15.8	64.1	4	63.1	3	M	110	85	187
Crim	13465	58.8	24.8	8	88	4	73.2	1.90	15.5	60.6	.55	14.6	14.6	65.7	7	64.7	7	M	100	93	184
Justin	13462	59.3	27.2	12	84	4	73.4	1.93	16.5	61.1	.49	15.7	15.7	65.2	6	64.2	4-1/2	M-S	103	90	190
Selkirk	13100	54.3	23.5	3	87	10	72.7	1.98	16.1	60.9	.54	15.6	15.6	65.9	5	64.1	3-1/2	M-S	100	90	184
<u>WISCONSIN STATION</u>																					
Chris	13751	62.5	33.9	55	44	1	75.7	1.89	15.1	58.9	.52	14.1	14.1	64.2	3	62.4	2-1/2	M-S	105	80	170
Crim	13465	63.0	37.3	74	25	1	76.7	1.81	14.9	56.7	.54	14.1	14.1	65.3	4	63.2	3	M	100	168	
Justin	13462	62.0	34.5	67	32	1	76.3	1.90	15.4	58.3	.48	14.7	14.7	64.4	5	62.4	3-1/4	M-S	105	90	181
Selkirk	13100	60.5	35.8	56	41	3	75.7	1.98	14.8	58.7	.55	14.5	14.5	65.7	4	63.6	2-1/2	W	100	95	177
<u>WYOMING STATIONS</u>																					
Chris	13751	61.0	26.5	4	94	2	73.1	1.36	16.3	63.7	.47	15.9	15.9	65.3	3	63.2	2	M	110	90	182
Crim	13465	60.0	27.7	18	80	2	73.8	1.29	16.1	60.9	.40	14.8	14.8	66.0	4	64.0	2-3/4	M	100	90	178
Justin	13462	60.5	28.4	12	86	2	73.5	1.40	16.4	62.3	.38	16.1	16.1	66.3	4	64.4	2-1/2	M	105	85	179
Selkirk	13100	60.0	29.3	9	89	2	73.4	1.31	15.5	65.1	.34	14.8	14.8	63.2	2	63.2	2-1/4	M	105	90	172
<u>STATE AVERAGES OF THE FOUR VARIETIES</u>																					
Minnesota		60.7	30.4	41	56	3	74.9	1.78	14.7	62.6	.46	14.1	14.1	64.3	5	63.1	4	M	106	91	173
Montana		59.8	29.1	17	79	4	73.7	1.69	15.3	62.3	.47	14.8	14.8	64.1	5	63.3	4	M	105	91	169
North Dakota		60.7	29.8	30	69	1	74.5	1.78	14.5	61.8	.46	13.8	13.8	62.7	5	62.0	4	M	106	87	169
South Dakota		58.5	25.3	10	85	5	73.3	1.89	16.1	61.2	.53	15.4	15.4	65.2	6	64.0	4-1/2	M-S	103	90	186
Wisconsin		62.0	35.4	63	36	1	76.1	1.90	15.1	58.2	.52	14.4	14.4	64.9	4	62.9	2-3/4	M	103	86	174
Wyoming		60.4	28.0	11	87	2	73.5	1.34	16.1	63.0	.40	15.4	15.4	65.2	3	63.7	2-1/2	M	105	89	178
1965 Average	5/	60.4	29.7	29	69	2	74.3	1.73	15.3	61.5	.47	14.7	14.7	64.4	5	63.2	3-3/4	M	105	89	175
1964 Average	5/	58.8	28.2	22	73	5	73.8	1.82	16.1	61.1	.49	15.4	15.4	64.0	4	64.0	3-1/2	M-S	107	88	180

1/ Clean dry - subtract 1#/bu. for dockage free T.W.

2/ 14% moisture basis

3/ Refer to reference mixogram for numerical curve pattern.

4/ B - Bucky, S - Strong, M - Mellow, W - Weak, D - Dead.

5/ Averages obtained by using data for Minnesota, Montana, North Dakota, South Dakota, Wisconsin and Wyoming.

TABLE 23

SAWFLY YIELD NURSERY

Cutbank, Montana

1965 CROP

Variety or Sel. No.	C.I. No.	T.W. #/Bu.	1000 Kwt.	Kernel Lg.	Med.	Size Sm.	Pot. Yld.	Wht. Min.	Wht. Pro.	Kern. Char.	Flr. Ext.	Min.@ 2/	Flr. Pro.	Mlg. Char.	Mlg. Per.	Mix. Abs.	Mix. Pat.	Bake Abs.	Mix. Time	Dough Char.	Crumb Color	Crumb Grain	Leaf Vol.	Bake Eval.
				%	%	%	%	%	%	%	%	%	%	%	%	%	%	%	min.					
Chinook Cypress Rescue	13320	61.5	31.4	25	73	2	74.2	1.68	16.1	S	60.6	.44	14.9	N	S	65.0	4	64.0	2-1/2	M	110 W	80 0	179	S-Q
	13344	60.5	24.6	0	95	5	72.8	1.75	15.7	S	59.8	.46	15.5	N-S	S	64.7	7	64.7	5	M-S	105 SIC	85 0	186	S
	12435	57.5	22.5	0	91	9	72.6	1.82	16.2	S	61.9	.48	16.0	N	S	66.6	6	64.8	4-3/4	S	110 C	70 0	195	S-Q
	13304	56.5	22.5	0	90	10	72.5	1.89	16.5	S	56.0	.54	16.2	N-S	U	67.9	7	64.0	4-1/4	M-S	110 SIC	90	189	S
Sawtana	10003	58.0	22.4	3	91	6	72.9	1.74	16.1	S	61.1	.50	15.8	N	S	64.7	4	64.7	2-3/4	M-S	110 SIC	100	193	S-Q
Thatcher 60-54	13596	60.5	33.2	16	83	1	73.8	1.67	15.3	S	61.6	.46	15.2	N	S	64.2	5	64.2	3-3/4	M-S	105	90	186	S
	61-107	60.0	31.2	26	72	2	74.2	1.68	16.3	S	59.7	.47	16.2	N	S	65.7	4	64.0	2-1/2	M	100	80 0	193	S-Q
	62-133	60.0	30.3	20	79	1	74.0	1.83	16.1	S	60.2	.46	15.8	N	S	65.0	4	64.0	3	M-S	100	70 0	198	Q
	63-114	59.5	36.9	48	51	1	75.4	1.80	15.9	VS	57.7	.46	15.7	N	S-Q	66.3	3	64.4	2	M	105	80	192	U
B61-23	13832	58.5	28.8	1	98	1	73.0	1.81	17.2	S	60.0	.49	17.1	N	S	67.0	6	65.2	3-1/2	M-S	100	90	193	S
B61-69 B64-1 B64-23	13831	59.0	25.6	0	95	5	72.8	1.82	15.5	S	60.9	.47	15.4	N	S	65.3	9	64.0	6-1/4	M-S	110 SIC	80 0I	198	S-Q
	13950	56.5	22.0	0	89	11	72.5	1.91	14.9	S-Q	59.5	.48	14.2	N	S	64.2	6	64.2	4-1/2	M-S	105 C	85	168	Q-S
	13951	54.5	22.6	0	88	12	72.4	1.96	16.1	S-Q	58.1	.56	15.8	N	U	65.7	6	64.0	4-1/2	M-S	110 SIC	80 10	182	S-Q
	L7167-112	61.5	27.5	7	91	2	73.3	1.79	15.7	S	59.3	.45	15.2	N	S	64.4	4	64.4	2-1/2	M-S	105 SIC	75 10	195	U-Q
L7167-194 CG 7531-2	61.0	28.1	1	94	5	72.8	1.83	15.9	S	60.6	.47	15.6	N	S	64.2	5	64.2	3-1/2	M-S	100 SIC	80	187	S	
	60.0	26.2	10	87	3	73.4	1.79	16.1	S	61.6	.47	15.4	N	S	66.0	5	64.0	3-1/4	M-S	105	90	181	S	

1/ Clean dry - subtract 1#/bu. for dockage free T.W.

2/ 14% moisture basis.

3/ S - Satisfactory, Q - Questionable, U - Unsatisfactory, V - Very.

4/ N - Normal, H - Hard, S - Soft.

5/ Refer to reference mixogram for numerical curve pattern.

6/ B - Bucky, S - Strong, M - Mellow, W - Weak, D - Dead, V - Very.

7/ C - Creamy, G - Gray, D - Dull, S1 - Slightly, V - Very, B - Bright, W - White.

8/ O - Open, I - Irregular, S - Soggy, T - Thick Wall, S1 - Slightly, C - Close.

TABLE 24

SAWFLY YIELD NURSERY

Dutton, Montana

1965 CROP

Variety or Sel. No.	C.I. No.	T.W. #/Bu.	1000 Kwt.	g.	Kernel Size		Pot. Yld.	Wht. Min.	Wht. Pro.	Kern. Char.	Flr. Ext.	Min. @ 65% Ex.	Flr. Pro.	Mlg. Char.	Mlg. Per.	Mix.		Bake Abs.	Mix. Pat.	Dough Char.	Crumb Color	Crumb Grain	Loaf Vol.	Bake Eval.
					Leg.	Med. Sm.										%	%							
Chinook	13320	59.5	33.8	44	55	1	75.2	1.57	12.6	S	60.9	.39	11.2	N	S	61.9	2	61.9	2-1/2	W	100 W	80 I	155	S-Q
Cypress	13344	59.5	31.3	19	80	1	73.9	1.58	12.1	S-Q	60.5	.40	10.4	N	S	61.3	3	61.3	3-1/4	W	105	90 C	157	S
Rescue	12435	59.0	30.5	30	69	1	74.5	1.56	11.9	S	61.7	.38	10.0	N	S	59.0	3	59.0	3-1/4	W	110 S1C	85	149	S
Sawtana	13304	58.5	30.7	19	80	1	73.9	1.56	12.0	S-Q	59.8	.41	11.8	N	S-Q	58.7	3	58.7	3-1/4	W	110 S1C	85	147	S
Thatcher	10003	58.5	30.5	24	75	1	74.2	1.58	11.9	S	61.9	.43	10.9	N	Q	58.3	3	58.3	2-3/4	W	100 W	80 IO	160	S-Q
60-54	13596	59.5	40.3	62	37	1	76.0	1.56	12.0	VS	63.8	.41	11.7	N	S	58.7	3	58.7	3	W	105	90 C	158	S-Q
61-107	13937	58.5	41.7	68	32	0	76.4	1.50	11.8	VS	60.0	.42	9.3	N	S-Q	60.3	3	60.3	3	W	95	85	163	S-Q
62-133	60.0	36.6	57	42	1	75.8	1.61	11.8	S	60.6	.42	11.7	N	S-Q	S-Q	59.0	4	59.0	4	W	105	90	156	S
63-114	58.5	39.5	74	25	1	76.7	1.57	12.2	VS	59.1	.42	11.2	N	S-Q	S-Q	62.3	3	62.3	2-1/2	W	105	90	154	S-Q
B61-23	13832	57.5	37.5	45	54	1	75.2	1.63	12.6	S	58.3	.41	11.3	N-S	Q	61.9	2	61.9	2-3/4	W	100	90	164	S
B61-69	13831	60.0	35.1	39	60	1	74.9	1.56	12.5	S	62.8	.40	12.2	N	S	60.0	4	60.0	4-1/4	W	105	80 OI	167	S
B64-1	13950	59.5	30.8	29	70	1	74.4	1.54	10.6	S	60.8	.38	10.0	N	S	56.0	3	56.0	2-1/2	WS1D	95	70	128	U
B64-23	13951	59.0	34.8	46	53	1	75.3	1.61	11.5	S	63.4	.43	11.3	N	Q	58.7	3	58.7	3	W	100	90	154	S-Q
L 7167-112	59.5	29.2	27	72	1	74.3	1.56	12.1	S	61.3	.38	10.7	N	S	S	60.3	3	60.3	3	W	100	80 IO	148	S
L 7167-194	59.5	39.5	24	75	1	74.2	1.59	11.6	S	61.1	.40	11.2	N	S	S	60.3	5	60.3	4-1/4	W	95	80 IO	150	S
SC 7531-2	58.5	31.6	53	46	1	75.6	1.61	12.2	S	62.8	.37	11.1	N	S	S	61.0	3	61.0	3	W	105	90	149	S

1/ Clean dry - subtract 1#/bu. for dockage free T.W.

2/ 14% moisture basis.

3/ S - Satisfactory, Q - Questionable, U - Unsatisfactory, V - Very.

4/ N - Normal, H - Hard, S - Soft.

5/ Refer to reference mixogram for numerical curve pattern.

6/ B - Bucky, S - Strong, M - Mellow, W - Weak, D - Dead, V - Very.

7/ C - Creamy, G - Gray, D - Dull, Sl - Slightly, V - Very, B - Bright, W - White.

8/ O - Open, I - Irregular, S - Soggy, T - Thick Wall, Sl - Slightly, C - Close.

TABLE 25

SAWFLY YIELD NURSERY

Sidney, Montana

1965 CROP

Variety or Sel. No.	C. I. No.	T. W. 1/ #/Bu.	1000 Kwt.	Kernel Size			Pot. Yld.	Wht.			Wht. Pro.	Kern. Char.	Flr. Ext.	Flr. Min. @ 65% Ex. Pro.			Mlg. Char.	Mlg. Per.	Mix.		Bake Abs.	Mix. Time	Dough Char.	Crumb Color	Crumb Grain	Loaf Vol.	Bake Eval.
				g.	%	%		%	%	2/ %				2/ %	2/ %	2/ %			2/ %	2/ %							
Chinook Cypress Rescue Sawtana Thatcher	13320	56.5	19.9	0	75	25	71.8	1.86	1.86	13.8	S		59.3	.48	13.5	N	S	59.7	4	59.7	3-1/2	M	105	90	171	Q	
	13344	57.0	17.5	0	60	40	71.0	1.93	1.93	14.8	Q		59.3	.45	14.7	N	S	62.5	5	62.5	4-1/2	M	110	80	185	S-Q	
	12435	57.5	18.7	0	82	18	72.1	2.18	2.18	15.2	S		62.2	.54	14.8	N	S-Q	63.2	5	63.2	5	M-S	105	95	186	S	
	13304	57.5	19.7	0	81	19	72.1	2.00	1.84	14.8	S		60.0	.51	14.4	N-S	S-Q	62.3	4	62.3	4	M-S	100	90	189	S	
	10003	58.0	20.0	1	85	14	72.4	1.84	1.84	13.1	S		61.9	.54	12.9	N	S-Q	57.2	4	57.2	3-3/4	M-S	100	95	170	Q	
60-54	13596	61.5	31.2	17	80	3	73.7	1.70	1.70	14.4	VS		64.8	.44	14.3	N	VS	61.9	4	61.9	3	M	100	95	173	S-Q	
61-107	13937	60.5	30.7	19	78	3	73.8	1.64	1.64	14.9	S		61.4	.47	14.7	N	S	60.3	4	58.3	3-3/4	W	110	90	180	U	
62-133	61.0	29.8	18	79	3	73.8	VS	1.68	1.68	15.8	VS		61.9	.49	15.6	N	S	60.3	5	58.3	3-3/4	M	115	90	181	Q-U	
63-114	59.5	31.0	24	73	3	74.1	VS	1.68	1.68	15.7	VS		60.2	.43	14.4	N	VS	61.6	4	61.6	3-1/4	M-S	110	90	171	S	
B61-23	13832	61.0	28.0	3	94	3	73.0	1.88	1.88	15.5	S		60.7	.48	15.3	N	S	62.3	4	60.3	3-3/4	M	105	90	185	S-Q	
B61-69	13831	60.0	21.9	0	85	15	72.3	2.06	2.06	14.9	S		62.2	.48	14.8	N	S	61.0	5	59.0	4-3/4	M-S	105	80	186	S-Q	
B64-1	13950	51.0	13.9	0	28	72	69.4	2.18	2.18	14.6	U		54.3	.59	13.9	N-S	U	59.0	3	59.0	3-1/2	W	105	80	155	U	
B64-23	13951	52.5	17.2	0	53	47	70.7	2.08	2.08	14.0	U-Q		56.2	.59	13.9	N-S	U	60.3	5	58.3	3-3/4	M	105	90	175	Q-U	
L 7167-112	58.5	18.8	0	77	23	71.9	1.88	1.88	14.4	S			57.7	.51	14.1	N	S-Q	58.7	7	58.7	4-3/4	M-S	105	90	165	U-Q	
L 7167-194	53.5	15.2	0	59	41	71.0	1.94	1.94	14.2	S			56.0	.61	13.6	N-S	U	58.1	6	58.1	4-1/2	WSID	95	80	155	U	
SC 7531-2	56.5	19.0	0	71	29	71.6	1.93	1.93	14.9	S			58.4	.46	14.6	N	Q	60.3	4	60.3	3-1/2	M	100	90	162	Q	

1/ Clean dry - subtract 1#/bu. for dockage free T.W.

2/ 14% moisture basis.

3/ S - Satisfactory, Q - Questionable, U - Unsatisfactory, V - Very.

4/ N - Normal, H - Hard, S - Soft.

5/ Refer to reference mixogram for numerical curve pattern.

6/ B - Bucky, S - Strong, M - Mellow, W - Weak, D - Dead, V - Very.

7/ C - Creamy, G - Gray, D - Dull, SL - Slightly, V - Very, B - Bright, W - White.

8/ O - Open, I - Irregular, S - Soggy, T - Thick Wall, SL - Slightly, C - Close.

TABLE 26

MONTANA SAWFLY YIELD NURSERY AVERAGES

1965 CROP

Variety or Sel. No.	C.I. No.	T.W. 1/ #/Bu.	1000 Kwt.	Kernel Size		Pot. Yld.	Wht. Min. 2/ %	Wht. Pro. 2/ %	Kern. Char. 3/ %	Flr. Ext. 2/ %	Min.@ 65%Ex. 2/ %	Flr. Pro. 2/ %	Mlg. Char. 4/ %	Mlg. Per. 3/ %	Mix Abs. 2/ %	Mix. Pat. 5/ %	Bake Abs. 2/ %	Mix. Time	Dough Char. 6/ %	Crumb Color 7/ %	Crumb Grain 8/ %	Loaf Vol.	Bake Eval. 3/ %	Gen. Eval. 3/ %	
				Lg.	Med. Sm.																				%
Chinook Cypress Rescue Sawtana Tatcher	13320	59.2	28.4	23	68	9	73.7	1.70	14.2	S	60.3	.44	13.2	N	S	62.2	3	61.9	2-3/4	M-W	105	83	168	S-Q	S-Q
	13344	59.0	24.3	6	78	15	72.6	1.75	14.2	S-Q	59.9	.44	13.5	N	S	62.8	5	62.8	4-1/4	M	107	85	176	S	S
	12435	58.0	23.9	10	81	9	73.1	1.85	14.4	S	61.9	.47	13.6	N	S	62.3	4	62.3	4-1/4	M	108	83	177	S	S
	13304	57.5	24.3	6	84	10	72.8	1.82	14.4	S	58.6	.49	14.1	N-S	S-Q	63.0	5	61.7	3-3/4	M	103	88	175	S	S-Q
	10003	58.2	24.3	9	84	7	73.2	1.72	13.7	S	61.6	.49	13.2	N	S-Q	60.1	4	60.1	3	M	100	92	174	S-Q	Q-S
60-54 61-107 62-133 63-114 B61-23	13596	60.5	34.9	32	67	1	74.6	1.64	13.9	VS	63.4	.44	13.7	N	S	61.6	4	61.6	3-1/4	M	103	92	172	S	S
	13937	59.7	34.5	38	61	1	74.8	1.61	14.3	S	60.4	.45	13.4	N	S	62.1	4	60.8	3	W-M	102	85	179	Q	Q-U
	62-133	60.3	32.2	32	67	1	74.6	1.71	14.6	S	60.9	.46	14.4	N	S	61.4	4	60.4	3-1/2	M-W	107	83	178	Q	Q
	63-114	59.2	35.8	49	50	1	75.4	1.68	14.6	VS	59.0	.44	13.8	N	S	64.0	3	62.8	2-1/2	M	107	87	172	Q	Q
	B61-23	59.0	31.4	16	82	2	73.7	1.77	15.1	S	59.7	.46	14.6	N	S	63.7	4	62.5	3-1/4	M	102	90	181	S	S
B61-69 B64-1 B64-23 L 7167-112 L 7167-194 SC 7531-2	13831	59.7	27.5	13	80	7	73.3	1.81	14.3	S	62.0	.45	14.1	N	S	62.1	6	61.0	5	M-S	107	80	184	S-Q	S-Q
	13950	55.7	22.2	10	62	28	72.1	1.88	13.4	Q-U	58.2	.48	12.7	N-S	Q	59.7	4	59.7	3-1/2	W-M	102	78	150	U	U-Q
	13951	55.3	24.9	15	65	20	72.8	1.88	13.9	U-Q	59.2	.53	13.7	N-S	U	61.6	5	60.3	3-3/4	M	105	87	170	Q	U-Q
	L 7167-112	59.8	25.2	11	80	9	73.2	1.74	14.1	S	59.4	.45	13.3	N	S	61.1	5	61.1	3	M	103	82	169	Q	Q
	L 7167-194	58.0	27.6	8	76	16	72.7	1.79	13.9	S-Q	59.2	.49	13.5	N	S-Q	60.9	5	60.9	4	M-W	97	80	164	Q	Q
SC 7531-2	58.3	25.6	21	68	11	73.5	1.78	14.4	S	60.9	.43	13.7	N	S	63.0	4	61.8	3-1/4	M	103	90	164	S-Q	S-Q	

1/ Clean dry - subtract 1#/bu. for dockage free T.W.

2/ 14% moisture basis.

3/ S - Satisfactory, Q - Questionable, U - Unsatisfactory, V - Very.

4/ N - Normal, H - Hard, S - Soft.

5/ Refer to reference mixogram for numerical curve pattern.

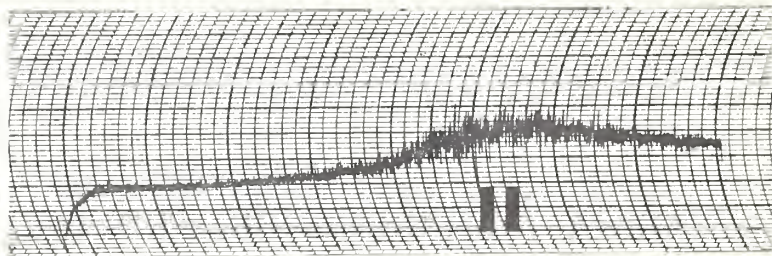
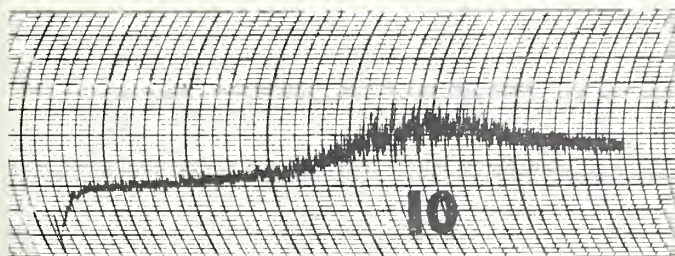
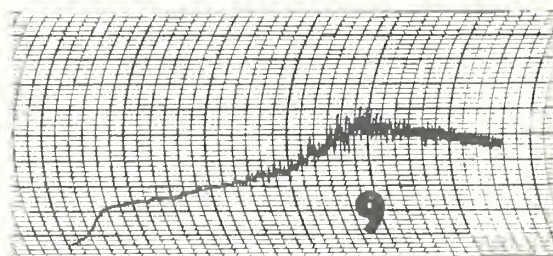
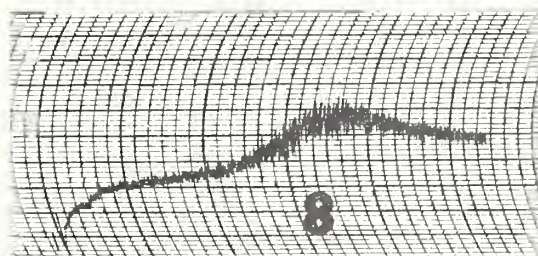
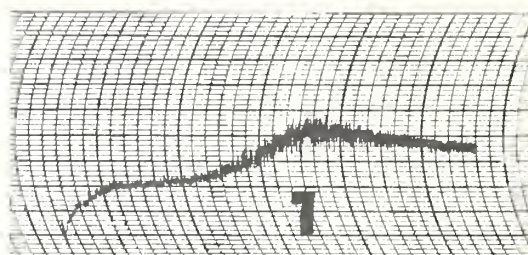
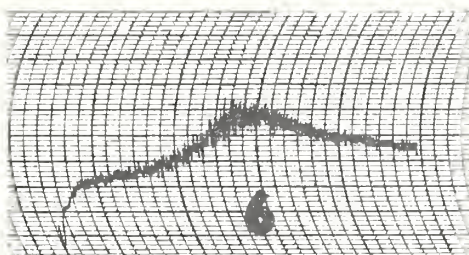
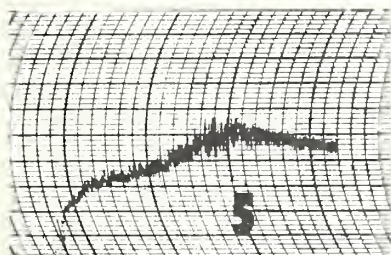
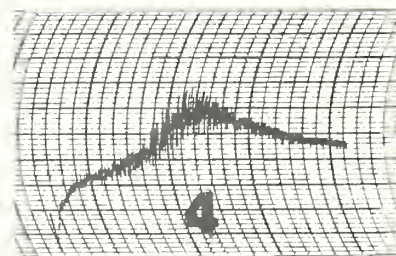
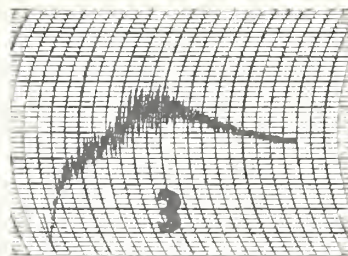
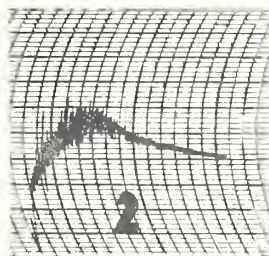
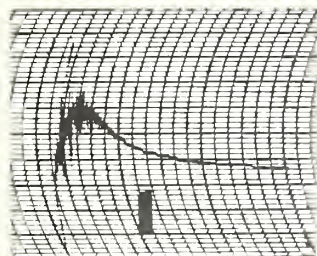
6/ B - Bucky, S - Strong, M - Mellow, W - Weak, D - Dead, V - Very.

7/ C - Creamy, G - Gray, D - Dull, S1 - Slightly, V - Very, B - Bright, W - White.

8/ O - Open, I - Irregular, S - Soggy, T - Thick Wall, S1 - Slightly, C - Close.

REFERENCE MIXOGRAMS

HARD RED SPRING WHEAT



U.S.D.A. SPRING WHEAT QUALITY LABORATORY

FARGO, NORTH DAKOTA





